

SYLLABUS
 Fall semester 2025 – 2026 academic year
 Educational program “6B06102 – Information Systems”

ID and name of course	Independent work of the student (IWS)	Number of credits			General number of credits	Independent work of the student under the guidance of a teacher (IWST)
		Lectures (L)	Practical classes (PC)	Lab. classes (LC)		
86200 – Enterprise Architecture and ERP-Systems	2	1.5	1.5	3	6	6
ACADEMIC INFORMATION ABOUT THE COURSE						
Learning Format	Cycle, component	Lecture types	Types of practical classes	Form and platform final control		
<i>Offline</i>	B, UC	Problem-based, Analytical Lectures	Assignments and Analysis Based on Case Studies, Case Problems	Oral offline		
Lecturer - (s)	Макетов Максат Толеужанович					
e-mail :	Maketov.Maxat@kaznu.kz					
Phone :	87777394467					
Assistant - (s)	Макетов Максат Толеужанович					
e-mail :	Maketov.Maxat@kaznu.kz					
Phone :	87777394467					
ACADEMIC COURSE PRESENTATION						
Purpose of the course	Expected Learning Outcomes (LO) *			Indicators of LO achievement (ID)		
	1. Cognitive. Forming the architecture of software systems for enterprise informatization, and explaining their structure, characteristics, and functions in the context of digital transformation			1.1 Explains the significance and schemes of enterprise architecture in the development of information systems; 1.2 Describes the capabilities of functional modules in business processes; 1.3 Briefly explains the importance of business process automation.		
	2. Functional. Build an architecture that describes the functions of ERP system functional modules			2.1 Highlights the key features of the modules. 2.2 Applies enterprise architecture models during the design process. 2.3 Prepares a rationale for the optimization of business processes by functional modules of ERP systems.		
	3. Functional. Analyze the development stages of software systems; perform an economic analysis and evaluation of the capabilities of existing ERP software systems			3.1 Analyzes services in business process automation; 3.2 Applies types of ERP systems appropriate to the size of the enterprise; 3.3 Evaluates the features of 1-C, Galaktika, and SAP R/3 systems		
	4. Cognitive. Form the architecture of software systems for enterprise informatization, explaining their nature, structure, and functions in the transition to digital transformation			4.1 Explains the significance and schemes of enterprise architecture in the development of information systems; 4.2 Briefly explains the importance of business process automation. 4.3 Describes the capabilities of functional modules in business processes;		

	5. Systemic. Analyze and organize the development stages of software systems; conduct an economic analysis and evaluation of the capabilities of existing ERP software systems.	5.1 Conducts an analysis of services in business process automation; 5.2 Applies types of ERP systems according to the size of the enterprise; 5.3 Analyzes the features of 1-C, Galaktika, and SAP R/3 systems.
Prerequisites	Business-II (Finance and Accounting); IT Infrastructure	
Postrequisites	Diploma Project	
Learning Resources	<p>Literature: main, additional.</p> <ol style="list-style-type: none"> 1. Alenikov, A. S. ERP Systems. Practical Course on 1C:ERP Enterprise Management: Textbook for Universities / A. S. Alenikov. — Moscow: Yurait Publishing, 2025. — 491 pages. — (Higher Education). — ISBN 978-5-534-20710-1. — URL: https://urait.ru/bcode/558621 2. Vlasova L.G., Goncharov D.I. Fundamentals of Operational and Production Planning Using the 1C:ERP Enterprise Management Information System. — Moscow: LLC "1C-Publishing", 2020. — 236 pages. 3. Baisholanova K.S. Electronic Business. Almaty: Economy, 2019 — 280 pages. 4. Kubaev K.E., Baisholanova K.S. Business Plan of Innovative Projects. — Textbook. — Almaty: Economy, 2017. — 272 pages. 5. Shtykova I.V. ERP Project Development: Textbook / I.V. Shtykova. — Rudny: RII, 2018. — 65 pages. <p>Professional scientific databases</p> <ol style="list-style-type: none"> 1. Repin V. Business Processes. Modeling, Implementation, Management. — Moscow: Mann, Ivanov and Ferber, 2022. — 477 pages. 2. Gromov A.I. Business Process Management: Modern Methods. — Lyubertsy: Yurait, 2016. — 367 pages. 3. Telnov Yu.F. Enterprise Engineering and Business Process Management. — Moscow: Unity, 2017. — 304 pages. <p>Internet resources</p> <p>Microsoft SQL Server 2017 1C Accounting</p> <p>Software</p> <ol style="list-style-type: none"> 1. http://www.erp-online.ru/software/galaktika/ERP-systems. Demo versions. 2. ERP or Automated Enterprise Management Systems // Electronic resource. Access mode: http://www.erp-online.ru/ 3. ERP Online — http://www.erp-online.ru/erp/ 4. ERP Portal — http://www.erp guru.ru 	

Academic course policy	<p>The academic policy of the course is determined by <u>the Academic Policy and the Policy of Academic Integrity of Al-Farabi Kazakh National University</u>.</p> <p>Documents are available on the main page of IS Univer .</p> <p>Integration of science and education. The research work of students, undergraduates and doctoral students is a deepening of the educational process. It is organized directly at the departments, laboratories, scientific and design departments of the university, in student scientific and technical associations. Independent work of students at all levels of education is aimed at developing research skills and competencies based on obtaining new knowledge using modern research and information technologies. A research university teacher integrates the results of scientific activities into the topics of lectures and seminars (practical) classes, laboratory classes and into the tasks of the IWST, IWS, which are reflected in the syllabus and are responsible for the relevance of the topics of training sessions and assignments.</p> <p>Attendance. The deadline for each task is indicated in the calendar (schedule) for the implementation of the content of the course. Failure to meet deadlines results in loss of points.</p> <p>Academic honesty. Practical/laboratory classes, IWS develop the student's independence, critical thinking, and creativity. Plagiarism, forgery, the use of cheat sheets, cheating at all stages of completing tasks are unacceptable.</p> <p>Compliance with academic honesty during the period of theoretical training and at exams, in addition to the main policies, is regulated by <u>the "Rules for the final control" , "Instructions for the final control of the autumn / spring semester of the current academic year" , "Regulations on checking students' text documents for borrowings"</u>.</p> <p>Documents are available on the main page of IS Univer.</p> <p>Basic principles of inclusive education. The educational environment of the university is conceived as a safe place where there is always support and equal attitude from the teacher to all students and students to each other, regardless of gender, race / ethnicity, religious beliefs, socio-economic status, physical health of the student, etc. All people need the support and friendship of peers and fellow students. For all students, progress is more about what they can do than what they can't. Diversity enhances all aspects of life. All students, especially those with disabilities, can receive counseling assistance by phone / e- mail Maketov.Maxat@kaznu.edu.kz 87777394467 or via video link in MS Teams</p>
-------------------------------	--

<https://teams.microsoft.com/l/channel/19%3A3ANCyVOKXFPQhtoOyKFhXIIOkF5YRYULY7dYixOVgNrM1%40thread.tacv2/General?groupId=dfbde614-a63e-4574-8d2e-727d4b7a85bf&tenantId=b0ab71a5-75b1-4d65-81f7-f479b4978d7b>

Integration MOOC (massive open online course). In the case of integrating MOOC into the course, all students need to register for MOOC. The deadlines for passing MOOC modules must be strictly observed in accordance with the course study schedule.

ATTENTION! The deadline for each task is indicated in the calendar (schedule) for the implementation of the content of the course, as well as in the MOOC. Failure to meet deadlines results in loss of points.

INFORMATION ABOUT TEACHING, LEARNING AND ASSESSMENT

Score-rating letter system of assessment of accounting for educational achievements				Assessment Methods															
Grade	Digital equivalent points	points, % content	Assessment according to the traditional system																
A	4.0 _	95-100	Great	<p>Criteria-based assessment is the process of correlating actual learning outcomes with expected learning outcomes based on clearly defined criteria. Based on formative and summative assessment.</p> <p>Formative assessment is a type of assessment that is carried out in the course of daily learning activities. It is the current measure of progress. Provides an operational relationship between the student and the teacher. It allows you to determine the capabilities of the student, identify difficulties, help achieve the best results, timely correct the educational process for the teacher. The performance of tasks, the activity of work in the classroom during lectures, seminars, practical exercises (discussions, quizzes, debates, round tables, laboratory work, etc.) are evaluated. Acquired knowledge and competencies are assessed.</p> <p>Summative assessment - type of assessment, which is carried out upon completion of the study of the section in accordance with the program of the course. Conducted 3-4 times per semester when performing IWS. This is the assessment of mastering the expected learning outcomes in relation to the descriptors. Allows you to determine and fix the level of mastering the course for a certain period. Learning outcomes are evaluated.</p> <table border="1"> <thead> <tr> <th>Formative and summative assessment</th> <th>Points % content</th> </tr> </thead> <tbody> <tr> <td>Activity at lectures</td> <td>5</td> </tr> <tr> <td>Work in practical classes</td> <td>25</td> </tr> <tr> <td>Independent work</td> <td>15</td> </tr> <tr> <td>Design and creative activity</td> <td>15</td> </tr> <tr> <td>Final control (exam)</td> <td>40</td> </tr> <tr> <td>TOTAL</td> <td>100</td> </tr> </tbody> </table>		Formative and summative assessment	Points % content	Activity at lectures	5	Work in practical classes	25	Independent work	15	Design and creative activity	15	Final control (exam)	40	TOTAL	100
Formative and summative assessment	Points % content																		
Activity at lectures	5																		
Work in practical classes	25																		
Independent work	15																		
Design and creative activity	15																		
Final control (exam)	40																		
TOTAL	100																		
A-	3.67	90-94																	
B+	3.33	85-89	Fine																
B	3.0	80-84																	
B-	2.67	75-79																	
C+	2.33	70-74																	
C	2.0	65-69																	
C-	1.67	60-64	Satisfactorily																
D+	1.33	55-59																	
D	1.0	50-54																	
FX	0,5	25-49	Unsatisfactory																
F	0	0-24																	

Calendar (schedule) for the implementation of the content of the course. Methods of teaching and learning.

A week	Topic name	Number of hours	Max. ball
Module I Enterprise Architecture			
1	L 1. Introduction to the Course. Nature, Structure, and Function of Enterprise Architecture	1	0
	SC 1. Construction and Analysis of Enterprise Architecture	1	0
	LC 1. Identification of Technical and Economic Factors in Forming the Organizational Structure of an Enterprise	2	0
2	L 2. Introduction to the Course. Nature, Structure, and Function of Enterprise Architecture	1	0
	SC 2. Construction and Analysis of Enterprise Architecture	1	0
	LC 2. Identification of Technical and Economic Factors in Forming the Organizational Structure of an Enterprise	2	0
3	L 3. Application and Functions of ERP Systems	1	0
	SC 3. Discussion on Business Process Reengineering	1	0
	LC 3. Enterprise Modeling Using Structural Analysis and Design Methodologies for "Building the Enterprise Business Architecture." AS-IS and TO-BE Models	2	0
4	L 4. Application and Functions of ERP Systems	1	0
	SC 4. Discussion on the Operational Structure of the Standard ERP System	1	0
	LC 4. Enterprise Modeling Using Structural Analysis and Design Methodologies for "Building the Enterprise Business Architecture." AS-IS and TO-BE Models	2	0
	IWST1. IWS1. Independent Study 1. Guidance on Completing Independent Work 1. Topic of Independent Work 1: "Problems and Tasks Solved by Modern ERP Systems in Enterprises."		0
5	L 5. MRP Class Systems	1	0
	SC 5. Analysis of the Main Functional Features of the MRP-I System	1	5
	LC 5. Building the System Architecture in the Enterprise	2	5
	IWST2. IWS1. Submission of Independent Work 1		30
Module II ERP Systems			

6	L 6. MRPII Class Systems	1	0
	SC 6. Discussion of the MRPII System Structure	1	5
	LC 6. Discussion of the MRPII System Structure	2	5
7	L 7. ERP Class Systems	1	0
	SC 7. Analysis of Functional ERP Systems	1	5
	LC 7. Creating a UML Model of the Enterprise Information System	2	5
	IWST3. Assessment on the Topic "Basic Principles of Building ERP Systems"		20
8	L 8. Classification of the Technological Architecture of ERP Systems	1	0
	SC 8. Analysis of ERP Systems' Scope Types	1	10
	LC 8. Creating a UML Model of the Enterprise Information System	2	10
Midterm control 1			100
9	L 9. Supply Chain Management (SCM) Methodology in Information Management Systems	1	0
	SC 9. Analysis of Processes in Supply Chain Management	1	2
	LC 9. Modeling Business Processes in the Enterprise Using Object-Oriented Modeling Methodology	2	3
10	L 10. Customer Relationship Management (CRM) in Information Management Systems	1	0
	SC 10. Discussion of CRM System Capabilities	1	2
	LC 10. Modeling Business Processes in the Enterprise Using Object-Oriented Modeling Methodology	2	3
MODULE 3 DHCP and NAC configuration			
11	L 11. Modern Concepts of Enterprise Resource Management	1	0
	SC 11. Analysis of Enterprise Resource Management Processes	1	2
	LC 11. "ERP System Implementation Project in the Enterprise"	2	3
	IWST4. Guidance on Completing IWS2. Topic of Independent Work 2: Cloud ERP Systems		0
12	L12. Implementation of ERP Systems	1	0
	SC 12. Discussion of the ERP System Implementation Project in the Enterprise	1	2
	LC 12. ERP System Implementation Project in the Enterprisev	2	3
	IWST5. IWS2. Assessment on the Topic "Basic Principles of Building ERP Systems"		20
13	L 13. Overview of the "IC / Galaktika" ERP System	1	0
	SC 13. Analysis of the Modules of the "IC / Galaktika" ERP System	1	5
	LC 13. Evaluation of Project Efficiency for ERP System Implementation	2	5
14	L 14. Personnel Management System	1	0
	SC 14. Analysis of Labor Resource Management	1	5
	LC 14. Evaluation of Project Efficiency for ERP System Implementation	2	5
	IWST6. Independent Study 6. Submission of Independent Work 2		30
15	L 15. Overview of SAP R/3 System Functions	1	0
	SC 15. Analysis of the Current Capabilities of SAP R/3 System	1	5
	LC 15. Functionality of ERP Systems as Part of Client-Oriented Technologies. Working with the Client Database	2	5
Midterm control 2			100
Final control (exam)			100
TOTAL for course			100

**RUBRICATOR OF THE SUMMATIVE ASSESSMENT
CRITERIA FOR ASSESSING LEARNING RESULTS**


IWS1. Topic "Problems and Tasks Solved by Modern ERP Systems in Enterprises". (30% of 100%)

Criterion	"Great" 25-30%	"Fine" 19-24%	"Satisfactory" 12-18%	"Unsatisfactory" 7-11%
Knowledge and understanding of the basic elements of the network topology and configuration	Understanding the degree of relevance, relevance, and reliability of the data found. Knowledge and understanding of all basic elements of the network topology and configuration	Understanding the degree of relevance, relevance and reliability of the data found. Knowledge of most elements of the network topology and configuration	Limited understanding of the appropriateness, relevance, and validity of basic elements of the network topology and configuration	Superficial understanding/lack of understanding of the degree of relevance, relevance, and reliability of the data found. Lack of knowledge of basic elements of the network topology and configuration
Designing skills	Clear presentation of the network topology and configuration	There are minor logical errors in the network topology and configuration	A large number of logical errors in the network topology and configuration	No network topology and configuration
Writing a report	The writing demonstrates clarity, conciseness, and accuracy.	The writing demonstrates clarity, conciseness, and correctness. Mostly no errors.	There are some key errors in the writing, and the clarity needs improvement.	The writing is unclear, and it is not easy to follow the content. Lots of errors in the text


IWS2. Topic "Basic Principles of Building ERP Systems" (20% of 100%)

Criterion	"Great" 16 - 20%	"Fine" 9-15%	"Satisfactorily" 5-8%	"Unsatisfactory" 0-4%
Working with extended network topology and static routing	Understand the degree of compliance, relevance, and reliability of routing protocols. Knowledge and understanding of extended network topology and static routing	Understanding the degree of relevance, relevance, and reliability of routing protocols. Knowledge of extended network topology and static routing	Limited understanding of the consistency, relevance, and validity of extended network topology and static routing	Superficial understanding/lack of understanding of the degree of compliance, relevance, and reliability of routing protocols. Lack of knowledge of extended network topology and static routing
Designing skills	Clear and clear presentation of extended network topology and static routing	There are small logical errors in the extended network topology and static routing	A large number of logical and syntax errors in the extended network topology and static routing	No network topology and static routing
Writing a report	The writing demonstrates clarity, conciseness, and accuracy.	The writing demonstrates clarity, conciseness, and correctness. Mostly no errors.	There are some key errors in the writing, and the clarity needs improvement.	The writing is unclear, and it is difficult to follow the content. Lots of errors in the text

Dean  Imankulov T.S.

Chair of the Academic Committee on the Quality of Teaching and Learning  Buribayev Zh.A.

Head of Department  Shormakova A.N.

Lecturer  Maketov M.

