

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY**

Cybernetics and Informatics Department

«CONFIRMED»

**Head of Cybernetics and Informatics
Department**

«24» 08 2020 y.
S.Ahadzhanova (S.Ahadzhanova)

CURRICULUM

Information systems in a management

Training direction: 073 “Management”

Educational program Management of Organizations and Administration

Faculty: Economics and Management

2020 – 2021 academic year

Curriculum of *Information systems in a management* was worked out for the third-year students of training direction 073 "Management".

Author: **Senior Lecturer, K. Ahadzhanov-Gonzalez**



Curriculum has been approved on the Cybernetics and Informatics Department Meeting.

Protocol # 10 from 17.06.2020 year

Head of Cybernetics and Informatics Department



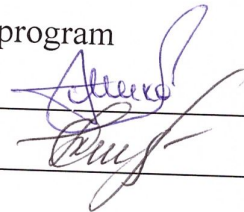
S. Ahadzhanova

Coordinated by:

Guarantor of educational and professional program

(project team leader)

Dean of the Faculty



A. M. Mykhalov

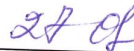
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Description of educational discipline

Indicators	Branch of knowledge, training direction, qualification level	Characteristics of course
		daily form of studies
Amount of credits - 4	Branch of knowledge 0306 "Management and Administrating"	<i>Normative</i>
Modules – 2	Specialty: 073"Management"	Year
Semantic modules: 5		2020-2021
		Course
		3
		Semester
		5
General amount of hours - 120		Lectures
A week's hours for the daily form of studies: audience – 4 independent work of student - 4	Educational level: <i>bachelor</i>	30 hours
		Practical, seminar
		30 hours
		Laboratory
		-
		Independent work
		60 hours
		Individual tasks:
		-
		Type of control: exam

Note. Correlation of amount of o'clock of audience employments makes to independent and individual work:
for the daily form of studies (%) - 50/50 (60/60)

1. Purpose and task of educational discipline

Purpose: forming an analytical and practical skills of work in the environment of new information technologies in obedience to the necessities of management.

Task:

- Understand principles of systems analysis and design including the appropriate application of techniques to elicit and document user requirements of an information system;
- understand the design principles of computer network architectures in order to be able to apply these principles to a business problem;
- Apply principles of database design and effectively design database schemas based on conceptual business models.

The study of the discipline "Information Systems in Management" involves the formation of students' competencies (derived from the educational and professional program):

№	Type of program competencies	Program competence	Code
General			
1		Ability to abstract thinking, analysis and synthesis.	3K 1
3		Ability to apply conceptual and basic knowledge, understanding the subject area and the profession of manager.	3K 2
4		Skills in the use of information and communication technologies to search, process, analyze and use information from various sources.	3K 4
Special (professional, subject) competencies			
7		Ability to create and organize effective communications in the management process.	ΦK8

2.3 Program learning outcomes

As a result of studying the discipline "Information Systems in Management" the student must be able to demonstrate the following learning outcomes (derived from the educational-professional program):

№	Program learning outcomes	Code
1	Demonstrate skills of search, collection and analysis of information, calculation of indicators to substantiate management decisions.	ППП 6
2	Be able to use modern information technologies, blockchain technologies in the management of resources and databases to justify management decisions on the choice of innovative technologies in agricultural enterprises.	ППП 19

Program of educational discipline

(approved by academic Council of SNAU Protocol #12 from 06.04.18y.)

Semantic module 1. Introduction to the informative systems and technologies.

Theme 1.1. Information systems. IS definition. Structure of IS. Why Information Systems? The Competitive Business Environment Emergence of the Global Economy Transformation of Industrial Economies Transformation of the Business Enterprise What Is an Information System? A Business Perspective on Information Systems Organizations Management Technology

Theme 1.2. The general principles of IS creation and functioning. Subsystems of IS model. The correlation between functions and levels of economics information system. Changing concepts of information systems The IS structure. The structure of management system. The general principles of IS creation and functioning.

Theme 1.3. The Information ware. Types of Data. Data versus Information. Requirements which behave to economic information.

Semantic module 2. Economic information as object of the automated treatment.

Theme 2.1. Systems Concepts. Four Model Types. Computer-Based Information system. Information management Interest in information management Who are the information users? What managers do

Theme 2.2 Providing subsystem. Hard and soft ware. Introduction Basic Computer Operations Components of a Computer Types

Semantic module 3. General description of the informative systems in a management

Theme 3.1. Using Information Systems for Competitive Advantage. Introduction How Information Systems Affect Organizations The Internet and Organizations What Managers Can Do

Theme 3.2. Database Systems. Database Management System is a collection of programs that is used to create, maintain and manipulate data in the database.

Database System What is wrong with a File System? Features of DBMS that cannot be provided with a file system Advantages of Database Systems

Theme 3.3. Basic Network Concepts. Common definitions. Types of Networks

Semantic module 4. Main principles of creation and use of the information systems in a management

Theme 4.1 Information systems at the enterprise. Problem Solving. The evolution of computer based information systems The information services organization The trend to end user computing Problem solving The systems approach

Theme 4.2. DSS DSS introduction, Concept and terminology of DSS

Semantic module 5. Information technology of electronic business

Theme 5.1 ERP system (Enterprise resources planning system) ERP introduction. Concept and terminology of ERP

Theme 5.2 An intellectual analysis of data Technology of Data Mining. Neuron networks. Genetic algorithms.

4. Structure of educational discipline

Names of the semantic modules and themes	Amount of hours					
	daily form					
	total	including				
lectures		PW	labs		IW	
1	2	3	4	5	6	7
Module 1. Information and Information systems						
Theme 1.1. Information systems. IS definition. Structure of IS.	1	1				
Theme 1.2. The general principles of IS creation and functioning. Subsystems of IS model. The correlation between functions and levels of economics information system.	1	1				
Theme 1.3. The Information ware.	12	2				10
Together after the semantic module 1	14	4	-			10
Theme 2.1. Systems Concepts. Four Model Types. Computer-Based Information system.	5	1	4			5
Theme 2.2. Providing subsystem. Hard and soft ware.	2	2				5
Together after the semantic module 2	17	3	4			10
Theme 3.1. Using Information Systems for Competitive Advantage.	18	2	6			10
Theme 3.2. Database Systems.	9	4	5			
Theme 3.3. Basic Network Concepts.	2	2				
Together after the semantic module 3	29	8	11			20
All the hours for the module 1	60	15	15			30
Module 2. Main principles of creation and use of the Information systems						
Theme 4.1 Information systems at the enterprise. Problem Solving.	4	2	2			
Theme 4.2. DSS	16	2	4			10
Together after the semantic module 4	20	4	6			10
Theme 5.1 ERP (Entreprise resources planning system)	8	4	4			
Theme 5.2 An intellectual analysis of data	32	7	5			20
Together after the semantic module 5	40	11	9			20
All the hours for the module 2	60	15	15			30
<i>All the hours for a semester</i>	120	30	30			60

5. Themes and plan of lecture employments

N	Name of theme	Amount hours
	<p>Theme: Information systems. IS definition. Structure of IS.</p> <ol style="list-style-type: none"> 1. Why Information Systems? 2. The Competitive Business Environment 3. Emergence of the Global Economy 4. Transformation of Industrial Economies 5. Transformation of the Business Enterprise 6. What Is an Information System? 7. A Business Perspective on Information Systems 8. Organizations 9. Management 10. Technology 	1
	<p>Theme: The general principles of IS creation and functioning. Subsystems of IS model. The correlation between functions and levels of economics information system.</p> <p>Changing concepts of information systems The IS structure. The structure of management system. The general principles of IS creation and functioning.</p>	1
	<p>Theme: The Information ware.</p> <ol style="list-style-type: none"> 1. Types of Data. 2. Data versus Information. 3. Requirements which behave to economic information. 	2
	<p>Theme: Systems Concepts. Four Model Types. Computer-Based Information system.</p> <ol style="list-style-type: none"> 1. Information management 2. Interest in information management 3. Who are the information users? 4. What managers do 	1
	<p>Theme: Providing subsystem. Hard and soft ware.</p> <ol style="list-style-type: none"> 1. Introduction 2. Basic Computer Operations 3. Components of a Computer 4. Computer Types 	2

	Theme: Using Information Systems for Competitive Advantage. 1. Introduction 2. How Information Systems Affect Organizations 3. The Internet and Organizations 4. What Managers Can Do	2
	Theme: Database Systems 1. Database 2. Database Management System is a collection of programs that is used to create, maintain and manipulate data in the database. 3. Database System 4. What is wrong with a File System? 5. Features of DBMS that cannot be provided with a file system Advantages of Database Systems	4
	Theme: Basic Network Concepts. 1. Common definitions. 2. Types of Networks	2
	Theme: Information systems at the enterprise. Problem Solving. 1. The evolution of computer based information systems 2. The information services organization 3. The trend to end user computing 4. Problem solving 5. The systems approach	2
	Theme: DSS 1. DSS introduction, 2. Concept and terminology of DSS	2
	Theme: ERP (Enterprise resources planning system) 1. ERP introduction. 2. Concept and terminology of ERP	4
	Theme: An intellectual analysis of data 1. Technology of Data Mining. 2. Neuron networks. Genetic algorithms.	7
	Total	30

6. Themes of laboratory employments

N	Name of theme	Amount hours
1	Laboratory work 1. Visualization in Excel: Charts	4
2	Laboratory work 2. Data analysis in Excel: Sort and Filtering	4
3	Laboratory work 3. Data analysis in Excel: Pivot Tables	4
4	Laboratory work 4. Prediction in Excel	4
5	Laboratory work 5. Consolidation in Excel	4
	Total	30

7. Independent work

N	Name of theme	Amount hours
	Theme: The Information ware. 4. Types of Data. 5. Data versus Information. 6. Requirements which behave to economic information.	10
	Theme: Systems Concepts. Four Model Types. Computer-Based Information system. 5. Information management 6. Interest in information management 7. Who are the information users? What managers do	5
	Theme: Providing subsystem. Hard and soft ware. 5. Introduction 6. Basic Computer Operations 7. Components of a Computer 8. Computer Types	5
	Theme: Using Information Systems for Competitive Advantage. 5. Introduction 6. How Information Systems Affect Organizations 7. The Internet and Organizations 8. What Managers Can Do	10
	Theme: DSS 1. DSS introduction, 2. Concept and terminology of DSS	10

	Theme: An intellectual analysis of data 1. Technology of Data Mining. 2. Neuron networks. Genetic algorithms.	20
	Total	60

8. Methods of studies

1. Methods of studies after the source of knowledges:

- 1.1. *Verbal*: a story, explanation, lecture, instructing, work, is with a book (reading, summarizing, making of tables, charts).
- 1.2. *Evident*: *demonstration, illustration.*
- 1.3. *Practical*: *laboratory method, practical work.*

2. Methods of studies after character of logic of cognition.

- 2.1. *Analytical.*
- 2.2. *Methods of synthesis.*
- 2.3. *Objective method.*
- 2.4. *Deductive method.*

3. Methods of studies are after character and level of independent intellection of students.

- 3.1. *Problem (whether problem informative)*
- 3.2. *Partly searching (heuristic)*
- 3.3. *Research*
- 3.4. *Genesial*
- 3.5. *Explanatory demonstrative*

4. Active methods of studies are the use of hardware's of studies, self-appraisal of knowledge, use of educational and supervisory tests, use of compendia of lectures.

5. Interactive technologies of studies are the use of multimedia technologies (kahoot! mind maps).

9. Control methods

1. Rating control after a 100-ball by the scale of evaluation.
2. A lead through of intermediate control is during a semester (intermediate attestation)
3. estimation of current work of students:
 - level of knowledge, shown on practical and laboratory employments;
 - activity is during the job processing on employment;
 - results of implementation and defense of laboratory works;
 - express-control is during audience employments;

- independent working of theme on the whole or separate questions;
- registration of abstracts, reports;
- testing results.

10. Points for exam

Current testing and independent work										Together	Attestation	Exam	Sum	
The module is 1 - 20					The module is 2 - 20									
Semantic module 1		Semantic module 2	Semantic module 3		Semantic module 4		Semantic module 5	Semantic module 5	IW	15	55 (40+ 15)	15	30	100
T1.1-1.2	T1.3	T2.1-T2.2	T3.1-T3.2	T3.3	T4.1	T4.2	T5.1	T5.2						
1	15	2	2	10	3	10	3	19						

Evaluation scale: national and ECTS

Total points	ECTS	National rating
		Exams, term paper, practice
90 – 100	A	Excellent
82-89	B	Good
75-81	C	
69-74	D	Satisfactory
60-68	E	
35-59	FX	Unsatisfactory
1-34	F	Poor

Methodical ware.

1. K.Ahadzhanov-Gonzalez Information Systems in a management(e-course in Moodle:Address - <https://cdn.snau.edu.ua/moodle/course/view.php?id=820>)

12. Recommended literature

Base

1. Kenneth C. Laudon and Jane Price Laudon. Management Information Systems: Organization and Technology, 6th edition, by Kenneth C. Laudon and Jane Price Laudon, produced by Prentice-Hall, a division of Pearson Education.
2. Rainer, R. Kelly and Cegielski, Casey G. (2019). "Introduction to Information Systems: Enabling and Transforming Business, 3rd Edition"

Additional

1. Lindsay, John (2016). Information Systems – Fundamentals and Issues. Kingston University, School of Information Systems.
2. Dostal, J. School information systems (Skolni informacni systemy). In Infotech 2017 - modern information and communication technology in education. Olomouc, EU: Votobia, 2017. p. 540 – 546. ISBN 978-80-7220-301-7.
3. O'Leary, Timothy and Linda. Computing Essentials Introductory 2018. McGraw-Hill on Computing 2018.com.