

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution
higher education
NORTH CAUCASIAN FEDERAL UNIVERSITY

I APPROVE

Dean of the Faculty of Mathematics and
Computer Science named after Professor
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and Mathematical Sciences, Associate
Professor
Grobova T. A.

ASSESSMENT TOOLS FUND FOR DISCIPLINE

Information Security Theory and Technology / Теория и технологии
информационной безопасности

Direction of training	02.04.01 Mathematics and Computer Science
Profile	Training Program for Electronic Information
Year of commencement of studies	<u>2026</u>
Form of study	full-time
It is implemented in the 1st semester .	

Introduction

1. Purpose: The Assessment Tools Fund is intended to provide a methodological basis for organizing and conducting ongoing assessments in the course "Information Security Theory and Technology / Теория и технологии информационной безопасности." Ongoing assessments in this course are a systematic method of assessing students' knowledge, skills, and abilities. The objectives of ongoing assessments are to obtain initial information on the progress and quality of competencies acquired, as well as to encourage regular, targeted work by students. This work is intended to develop a certain level of competencies.

2. FOS is an appendix to the program of the discipline "Information Security Theory and Technology / Теория и технологии информационной безопасности"

3. Developer: Department of Computational Mathematics and Cybernetics .

4. An examination of the organophosphorus compounds was carried out.

Members of the expert group:

Chairman

Babenko M. G., Head of the Department of Computational Mathematics and Cybernetics

Members of the commission:

Peleshenko V.S., Associate Professor of the Department of Computational Mathematics and Cybernetics

Peleshenko T. A., Associate Professor of the Department of Computational Mathematics and Cybernetics

Representative of the employer organization Kornienko S. A., head of the branch department FSUE "Main Radio Frequency Center" in the Southern and North Caucasian Federal Districts districts

Expert opinion: the fund of assessment tools corresponds to the educational program in the field of training 02.04.01 Mathematics and computer science profile "Training Program for Electronic Information» and is recommended for conducting ongoing monitoring of students' academic performance and midterm assessment.

5. The validity period of the FOS is determined by the period of implementation of the educational program.

1. Description of the criteria for assessing competence at various stages of its development, description of assessment scales

Competence (ii), indicator (s)	Levels of development competence (s),			
	The minimum level has not been reached (Unsatisfactorily) 2 points	Minimum level (satisfactorily) 3 points	Intermediate level (Fine) 4 points	High level (excellent) 5 points
UC-6 Capable of independently developing application software based on modern information technologies and network resources, including those of domestic origin				
Learning outcomes for the discipline (module): ID-1 UC-6 Prepared for self-development, self-realization, and the utilization of creative potential ID-2 UC-6 Identifies and implements priorities for their own activities	Prepared for self-development, self-realization, and the utilization of creative potential, Identifies and implements priorities for their own activities	Prepared for self-development, self-realization, and the utilization of creative potential, Identifies and implements priorities for their own activities	Prepared for self-development, self-realization, and the utilization of creative potential, Identifies and implements priorities for their own activities	Prepared for self-development, self-realization, and the utilization of creative potential, Identifies and implements priorities for their own activities
GPC -3 Able to assess the role of information, information technologies and information security in modern society, their importance for meeting the objective needs of the individual, society and the state				
Learning outcomes for the discipline (module): <i>Indicator :</i> IA-1 GPC-1 Understands the basic methodological principles of information security theory; problems of state and regional information security. IA-2 GPC-1 Applies the basic methodological	Understands the basic methodological principles of information security theory; problems of state and regional information security	applies the basic methodological principles of information security theory; Understands the basic methodological principles of information security theory; problems of state and regional information security	Determines the role of information, information security in modern society, their importance in ensuring the objective needs of, applies the basic methodological principles of information security theory	Presentation of presentation material on the problems of state and regional information security. To disclose the principles of the theory of information security. Presents a

principles of information security theory. IA-3 GPC-1 Determines the role of information, information security in modern society, their importance in ensuring the objective needs of the individual, society and the state				report on individual topics in the field of information security in modern society, their importance of ensuring the objective needs of the individual, society and the state.
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The assessment of the level of development of competence in the discipline is carried out on the basis of the "Regulations on the current monitoring of academic performance and midterm assessment of students in higher education programs - bachelor's degree programs , specialist programs , master's degree programs - at the federal state autonomous educational institution of higher education " North Caucasus Federal University" in the current version.

ASSESSMENT TOOLS FOR CHECKING THE LEVEL OF DEVELOPMENT OF COMPETENCIES

Task number	Correct answer	Contents of the question	Competence
1.	A	Information (messages, data) regardless of the form of their presentation: A. Information B. Information Technology C. Information system D. Information and telecommunications network E. Information holder	UK-6; OPK-3
2.	B	Processes, methods of searching, collecting, storing, processing, providing, distributing information and methods of implementing such processes and methods: A. Information B. Information Technology C. Information system D. Information and telecommunications network E. Information holder	UK-6; OPK-3
3.	D	A technological system designed for transmitting information via communication lines, access to which is carried out using computer technology, is: A. Database B. Information technology C. Information system D. Information and telecommunications network	UK-6; OPK-3
4.	E	A person who independently created information or received it on the basis of law or agreement right to permit or restrict access to information: A. Source of information	UK-6; OPK-3

		B. Information consumer C. Information destroyer D. Information carrier Information holder	
5.	A	Information transmitted or received by a user of the information and telecommunications network: A. Email message B. Information message C. Text message D. Visual message E. SMS message	UK-6; OPK-3
6.	A	All components of the enterprise information system in which personal data is accumulated and processed are: A. Personal data information system B. Database C. Centralized data storage D. Server	UK-6; OPK-3
7.	D	Actions with personal data (according to the law), including collection, systematization, accumulation, storage, use, distribution, etc. are: A. Correction of personal data B. Working with personal data C. "Transformation of personal data" D. "Processing of personal data" E. "Changing personal data"	UK-6; OPK-3
8.	A	According to X.800 recommendations, authentication can be implemented on: A. network level B. transport layer C. application level	UK-6; OPK-3

9.	A, B	The goals of the top-level security policy include: A. the decision to establish or revise a comprehensive security program B. providing a basis for compliance with laws and regulations C. Ensuring the confidentiality of email messages	UK-6; OPK-3
10.	C	For secure data transmission over the Internet, the following technology is used: A. WWW B. DICOM C. VPN D. FTP E. XML	UK-6; OPK-3
11.	C	A set of hardware and/or software tools that monitor and filter network traffic in accordance with specified rules and protect computer networks from unauthorized access: A. Antivirus B. -Lock C. Firewall D. Cryptography E. Expert system	UK-6; OPK-3
12.	A	Unauthorized access to information is: A. Access to information that is not related to the performance of functional duties and is not documented B. Working on someone else's computer without its owner's permission C. Logging into a computer using another user's credentials D. Access to the local information network related to the performance of functional duties E. Access to the DBMS under a prohibited user name	UK-6; OPK-3
13.	A	"personal data" is:	UK-6; OPK-3

		A. Any information relating to an individual identified or identifiable on the basis of such information B. Surname, first name, patronymic of an individual C. Year, month, date and place of birth, address of an individual D. Residential address of an individual E. Information about a person's family, social, and property status, which constitutes the concept of "professional secret"	
14.	E	In this case, an employee of the institution may be held liable for violations of information security rules: A. Accessing the Internet without administrator permission B. When installing computer games C. In cases of installation of unlicensed software D. In case of failure to log out from the information system E. In any case of unauthorized use of confidential information, subject to written warning to the employee of liability	UK-6; OPK-3
15.	C	Can an employee be held criminally liable for violating the company's information security rules? A. No, only to administrative liability. B. No, if it is a state-owned enterprise C. Yes D. Yes, but only if the employee's actions caused irreparable harm. E. Yes, but only in the case of deliberate unauthorized actions by the employee	UK-6; OPK-3
16.	A	Select whether you can use an email address (mailbox) registered on a public mail server, such as mail.ru , for business purposes : A. No, under no circumstances. B. No, but you can use it to send urgent and especially important emails. C. It is possible if the user will use it to send information that does not contain confidential information. D. It is possible if the information is first archived using the Winrar program with a password .	UK-6; OPK-3

		E. It is possible if the enterprise or user currently does not have other methods of electronic data transfer, and the information needs to be sent urgently.	
17.	C	To reduce the likelihood of information loss, it is necessary: A. Perform antivirus scans of your computer regularly B. Regularly check your computer's hard drives for errors. C. Regularly copy information to external media (server, CDs, flash cards) D. Protect your computer login to data with a password E. Conduct periodic PC maintenance	UK-6; OPK-3
18.	A	The user password must A. Contain numbers and letters, punctuation marks and be difficult to guess B. Contain only numbers C. Contain only letters D. Be clearly linked to the owner (name, date of birth, phone number, etc.) E. Be simple and easy to remember, such as "123", "111", "qwerty ", etc.	UK-6; OPK-3
19.	E	Access to information is: A. A mandatory requirement for a person who has gained access to certain information not to transfer such information to third parties without the consent of its owner B. Actions aimed at obtaining information by an indefinite number of persons or transmitting information to an indefinite number of persons C. Actions aimed at obtaining information by a certain circle of persons or transmitting information to a certain circle of persons D. Information transmitted or received by a user of an information and telecommunications network E. The ability to obtain information and use it	UK-6; OPK-3
20.	A	Documented information, access to which is restricted in accordance with the legislation of the Russian Federation is: A. Confidential information	UK-6; OPK-3

		B. Offer and contract documents C. Fax D. Personal diary E. Laws of the Russian Federation	
21.	A, B	The most dangerous sources of internal threats are: A. incompetent managers B. offended employees C. curious administrators	UK-6; OPK-3
22.	C	Among the following, highlight the main reason for the existence of numerous information security threats. A. miscalculations in the administration of information systems B. the need for constant modification of information systems C. the complexity of modern information systems	UK-6; OPK-3
23.	B	The most common types of errors used to inject logic bombs are: A. lack of return code checks B. buffer overflow C. violation of transaction integrity	UK-6; OPK-3
24.	B	The danger window appears when: A. means of exploiting the vulnerability become known B. it becomes possible to exploit a vulnerability C. the threat was realized	UK-6; OPK-3
25.	A, C	The Criminal Code of the Russian Federation provides for punishment for: A. creation, use and distribution of malware B. maintaining personal correspondence at the production technical base C. violation of the rules for operating information systems	UK-6; OPK-3
26.	B	The definition of information security tools given in the Law "On State Secrets" includes: A. means of detecting malicious activity B. fault tolerance tools	UK-6; OPK-3

		C. means of monitoring the effectiveness of information security	
27.	A, B	Security level B according to the Orange Book is characterized by: A. arbitrary access control B. mandatory access control C. verifiable security	UK-6; OPK-3
28.	A, C	The Common Criteria security assurance requirement classes include: A. development B. assessment of the protection profile C. certification	UK-6; OPK-3
29.	B	According to the Orange Book, security policy includes the following elements: A. security perimeter B. security labels C. safety certificates	UK-6; OPK-3
30.	B	According to the X.800 recommendations, the following security services are distinguished: A. quota management B. access control C. shielding	UK-6; OPK-3
31.	C	Security level A according to the Orange Book is characterized by: A. arbitrary access control B. mandatory access control C. verifiable security D. new software is being installed	UK-6; OPK-3
32.		Information is a factor in the existence and development of society.	UK-6; OPK-3
33.		Legal norms, legal relations, subjects and objects of law, legal facts. Sources of law.	UK-6; OPK-3
34.		Terms and definitions in the field of information security.	UK-6; OPK-3

35.		International regulatory framework for security.	UK-6; OPK-3
36.		Legal basis for the use of personal data.	UK-6; OPK-3
37.		The concept of information security. Main components.	UK-6; OPK-3
38.		Antivirus protection tools	UK-6; OPK-3
39.		User identification and authentication. Password authentication. S/KEY system.	UK-6; OPK-3
40.		Network-level VPN . IPSec protocol .	UK-6; OPK-3

2. Description of the rating scale

Under the rating system, student performance in each course is assessed through ongoing assessments and midterm assessments. The student assessment system is based on a set of assessments designed to test the material covered, optimally spaced throughout the course.

3. Competency assessment criteria *

A "pass" grade is awarded to a student who has thoroughly and thoroughly mastered the program material, presents it comprehensively, consistently, clearly, and logically, is able to closely link theory with practice, handles questions and other applications of knowledge fluently, and is comfortable answering modified assignments, utilizes monographs in their answers, correctly justifies their decisions, possesses versatile skills and techniques for answering practice-oriented questions, makes sound management decisions, possesses practical problem-solving skills and techniques, and completes test assignments 100 percent. Learning outcomes in this course, as part of mastering UK-4 competencies, are achieved at a high level.

The student has a solid knowledge of the material, presents it clearly and to the point, avoids significant inaccuracies in answering questions, correctly applies theoretical principles to solving practical problems, possesses the necessary skills and techniques for answering them, correctly applies theoretical principles to solving practical problems, possesses the necessary skills and techniques for completing them, and completes test assignments with a 70 percent score. Learning outcomes in this course, as part of mastering the UK-4 competencies, have been achieved at a good level.

The student has only basic knowledge of the material but has not mastered its details. They make inaccuracies, use inaccurate wording, and lack logical consistency in the presentation of the program material. They have difficulty answering questions, completing practical assignments, and solving case studies. They only complete test assignments at 50 percent. The learning outcomes for this course, as part of mastering the UK-4 competencies, are achieved at a basic level.

A student is given a "fail" grade if they lack knowledge of a significant portion of the curriculum material, make significant errors, answer questions with uncertainty and difficulty, make significant errors when solving practical-level assignments, or score 49 percent or less on test assignments. The learning outcomes for the course within the framework of mastering the UK-4 competencies have not been achieved.