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MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution
Higher Education
"NORTH CAUCASUS FEDERAL UNIVERSITY"

APPROVED BY
Acting Director of the Institute of
Advanced Engineering,
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Associate Professor
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FUND OF ASSESSMENT TOOLS
on Educational Practice
Introductory practice

Field of study	11.03.02 Infocommunication Technologies and Communication Systems
Profile	Intelligent Data Processing in Infocommunication Systems and Networks
Year of start of training	2026
Form of study	Full-time
Implemented in a semester	2

Foreword

1. Purpose

The Fund of Assessment Tools for Educational Introductory Practice is designed to assess the level of formation of competencies of students in the field of training 11.03.02 Infocommunication Technologies and Communication Systems, direction (profile) Intelligent Data Processing in Infocommunication Systems and Networks for Educational Introductory Practice.

2. The FAT is an appendix to the program of educational introductory practice.

3. Developer N.Y. Bratchenko, Associate Professor of the Department of Digital, Robotic Systems and Electronics of the Institute of Advanced Engineering, Candidate of Physical and Mathematical Sciences, Associate Professor

4. An examination of the FOC was carried out.

Members of the expert group:

Chairman: V.P. Mochalov, Professor of the Department of Digital, Robotic Systems and Electronics of the Institute of Advanced Engineering.

Members of the Commission:

S.V. Yakovlev, Associate Professor of the Department of Digital, Robotic Systems and Electronics of the Institute of Advanced Engineering

N.Y. Bratchenko, Associate Professor of the Department of Digital, Robotic Systems and Electronics of the Institute of Advanced Engineering

Representative of the employer Mironov V.A., General Director of Orintex LLC, Stavropol

Expert opinion: the fund of assessment tools corresponds to the EP in the direction of training 11.03.02 Infocommunication Technologies and Communication Systems, direction (profile) Intelligent Data Processing in Infocommunication Systems and Networks and is recommended for assessing the level of formation of students' competencies in educational introductory practice.

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

1. Description of indicators and assessment criteria at various stages of their formation, description of assessment scales

Competency(s), indicator(s)	Levels of competence formation(s),			
	The minimum level has not been reached (unsatisfactory) 2 points	Minimum level (satisfactory) 3 points	The minimum level has not been reached (unsatisfactory) 2 points	High level (excellent) 5 points
Competence: UK-3				
Results of the internship: <i>Indicator:</i> ID-1 UK-3 participates in interpersonal and group interaction, using an inclusive approach, effective communication	Does not cope with the tasks of practice as part of a group, observing the rules of social interaction.	Partially fulfills the tasks of practice as part of a group, observing the rules of social interaction.	Performs the assigned tasks of practice as part of a group, observing the rules of social interaction.	Fulfills the tasks of the practice in full as part of a group, observing the rules of social interaction.
Results of the internship: <i>Indicator:</i> ID-2 UK-3 ensures the work of the team to obtain optimal results of joint work, taking into account the individual capabilities of its members, the use of methodology for achieving success, methods, information technologies and foresight technologies	Does not implement effective methods of teamwork to obtain optimal work results and analyze them. Poorly applies information technologies and foresight technologies.	Partially applies effective methods of teamwork to obtain optimal work results and their analysis. Applies information and foresight technologies.	Applies effective methods of teamwork to obtain optimal work results and their analysis. Applies information technologies and foresight technologies.	Fully applies effective methods of teamwork to obtain optimal work results and their analysis. Applies information and foresight technologies.
Results of the internship: <i>Indicator:</i> ID-3 UK-3 ensures the fulfillment of tasks based on monitoring	Does not perform the assigned tasks of the practice, and also does not ensure their implementation based on	He does not fulfill the tasks of the practice insufficiently, and also partially ensures their implementation	Performs the assigned tasks of the practice, as well as ensures their implementation based on the	Independently performs the assigned tasks of the practice, and also fully ensures their implementation

teamwork and timely response to significant deviations	monitoring of teamwork.	based on the monitoring of teamwork.	monitoring of teamwork.	based on the monitoring of teamwork.
Competency: UK-4				
Results of the internship: <i>Indicator:</i> ID-1 UK-4 chooses an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms	Does not cope with the fulfillment of the tasks of practice and the choice of an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms	Partially fulfills the tasks of practice, choosing an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms	Fulfills the tasks of practice, choosing an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms	Fulfills the tasks of the practice in full, choosing an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms
Results of the internship: <i>Indicator:</i> ID-2 UK-4 uses information and communication technologies to increase the efficiency of professional interaction, search for the necessary information in the process of solving standard communicative tasks in the state and foreign languages	Does not sufficiently search for the necessary information in the process of solving standard communicative tasks in the state and foreign languages, and also uses information and communication technologies to increase the effectiveness of professional interaction	Partially searches for the necessary information in the process of solving standard communicative tasks in the state and foreign languages, and also uses information and communication technologies to increase the efficiency of professional interaction	Applies effective methods of searching for the necessary information in the process of solving standard communicative tasks in the state and foreign languages, and also uses information and communication technologies to increase the efficiency of professional interaction	Fully searches for the necessary information in the process of solving standard communicative tasks in the state and foreign languages, and also uses information and communication technologies to increase the efficiency of professional interaction
Results of the internship: <i>Indicator:</i> ID-3 UK-4 evaluates the effectiveness of the applied	Does not fulfill the tasks of practice, and also does not evaluate the effectiveness of the applied communicative	Does not sufficiently fulfill the tasks of practice, and also partially evaluates the effectiveness of the applied	Fulfills the tasks of the practice, and also evaluates the effectiveness of the applied communication technologies in	Independently performs the assigned tasks of practice, as well as fully ensures the assessment of the effectiveness

communication technologies in professional interaction in the state and foreign languages, and selects the optimal ones.	technologies in professional interaction in the state and foreign languages, makes a choice of optimal	communicative technologies in professional interaction in the state and foreign languages, makes a choice of optimal	professional interaction in the state and foreign languages, and selects the optimal	of the applied communicative technologies in professional interaction in the state and foreign languages, makes a choice of optimal
Competency: UK-5				
Results of the internship: <i>Indicator:</i> ID-1 UK-5 identifies, compares and analyzes information about the cultural characteristics and traditions of various social groups, in order to choose a strategy for interaction with their carriers	Does not cope with the search for the information necessary to solve the tasks, the identification and analysis of information about the cultural characteristics and traditions of various social groups, for the choice of a strategy for interaction with their carriers	Partially searches for the information necessary to solve the tasks, identifying and analyzing information about the cultural characteristics and traditions of various social groups, to choose a strategy for interaction with their carriers	Searches for the information necessary to solve the tasks, identifying and analyzing information about the cultural characteristics and traditions of various social groups, to choose a strategy for interacting with their carriers	Fully searches for the information necessary to solve the tasks, identifying and analyzing information about the cultural characteristics and traditions of various social groups, to choose a strategy for interaction with their carriers
Results of the internship: <i>Indicator:</i> ID-2 UK-5 demonstrates a respectful attitude to the historical heritage and socio-cultural traditions of various social groups, based on knowledge of the stages of historical development of Russia (including the main events, the main historical figures) in the context of world history and a	Does not sufficiently fulfill the tasks of practice, does not demonstrate respect for the historical heritage and socio-cultural traditions of various social groups	Partially fulfills the tasks of the practice, demonstrates respect for the historical heritage and socio-cultural traditions of various social groups	Fulfilling the tasks of the practice, he demonstrates a respectful attitude to the historical heritage and socio-cultural traditions of various social groups	Fully fulfilling the tasks of the practice, he demonstrates a confident and respectful attitude to the historical heritage and socio-cultural traditions of various social groups

number of cultural traditions of the world (depending on the environment and the tasks of education), including world religions, philosophical and ethical teachings				
Results of the internship: <i>Indicator:</i> ID-3 UK-5 chooses ways of constructive interaction with people, taking into account their socio-cultural characteristics, in order to successfully perform professional tasks and strengthen social integration	Does not fulfill the tasks of practice, and also does not choose ways of constructive interaction with people, taking into account their socio-cultural characteristics in order to successfully perform professional tasks and strengthen social integration	Does not fulfill the tasks of the practice insufficiently, and also partially chooses ways of constructive interaction with people, taking into account their socio-cultural characteristics, in order to successfully perform professional tasks and strengthen social integration	Fulfilling the tasks of the practice, chooses ways of constructive interaction with people, taking into account their socio-cultural characteristics in order to successfully perform professional tasks and strengthen social integration	Independently performs the tasks of the practice, as well as confidently and correctly chooses ways of constructive interaction with people, taking into account their socio-cultural characteristics in order to successfully perform professional tasks and strengthen social integration
Results of the internship: <i>Indicator:</i> ID-4 UK-5 analyzes various socio-cultural trends, facts and phenomena on the basis of a holistic view of the foundations of the universe and the prospects for its development, understands the relationship between the diversity of worldviews and	Does not analyze various socio-cultural trends, facts and phenomena on the basis of a holistic view of the foundations of the universe and the prospects for its development	Does not confidently analyze various socio-cultural trends, facts and phenomena on the basis of a holistic view of the foundations of the universe and the prospects for its development	Analyzes various socio-cultural trends, facts and phenomena on the basis of a holistic view of the foundations of the universe and the prospects for its development	Independently and confidently analyzes various socio-cultural trends, facts and phenomena on the basis of a holistic view of the foundations of the universe and the prospects for its development

the course of development of history, science, human ideas about nature, society, cognition and oneself.				
Competence: UK-8				
Results of the internship: <i>Indicator:</i> ID-1 UK-8 is familiar with the general characteristics of ensuring security and sustainable development in various spheres of life; classification of military emergencies, principles and methods of organizing the protection of the population from dangers arising in peacetime and during hostilities	Does not understand the general characteristics of ensuring security and sustainable development in the field of infocommunications	Poorly understands the general characteristics of ensuring security and sustainable development in the field of infocommunications	Understands the general characteristics of security and sustainability in the field of infocommunications	Consciously understands the general characteristics of ensuring security and sustainable development in the field of infocommunications
Results of the internship: <i>Indicator:</i> ID-2UK-8 assesses the probability of potential danger in everyday life and professional activities and takes measures to prevent it	Does not take measures to prevent possible threats to life	Does not take timely measures to prevent possible threats to life	Takes measures to prevent possible threats to life	Independently takes measures to prevent possible threats to life

Results of the internship: <i>Indicator:</i> ID-3 ^{UK-8} applies the basic methods of protection in the threat and occurrence of emergencies and military conflicts in everyday life and professional activities.	Does not comply with workplace safety requirements when performing internship tasks	Does not sufficiently comply with workplace safety requirements when performing practical tasks	Complies with workplace safety requirements when performing internship tasks	Independently and fully complies with workplace safety requirements when performing practical tasks
Competence: OPK-1				
Results of the internship: <i>Indicator:</i> ID-1 ^{OPK-1} understands the fundamental laws of nature and the basic physical mathematical laws and methods of accumulating, transmitting and processing information.	Is familiar with the methods of accumulating, transmitting and processing information. Does not understand the fundamental laws of nature and the basic physical mathematical laws.	Is familiar with the methods of accumulating, transmitting and processing information. Insufficiently understands the fundamental laws of nature and the basic physical mathematical laws.	Is familiar with the methods of accumulating, transmitting and processing information. Understands the fundamental laws of nature and the basic physical mathematical laws.	Fully familiar with the methods of accumulating, transmitting and processing information. Understands the fundamental laws of nature and basic physical mathematical laws and understands how to apply them to solving practical problems.
Results of the internship: <i>Indicator:</i> ID-2 ^{OPK-1} applies physical laws and mathematical methods to solve problems of a theoretical and applied nature	He does not apply the fundamental laws of nature and the basic physical mathematical laws in solving practical problems.	He partially applies the fundamental laws of nature and the basic physical mathematical laws to solve practical problems.	He applies the fundamental laws of nature and the basic physical mathematical laws in solving practical problems.	Independently applies the fundamental laws of nature and the basic physical mathematical laws in solving practical problems.
Results of the internship: <i>Indicator:</i> ID-3 ^{OPK-1} uses the knowledge of physics and mathematics to solve practical	He does not have knowledge of physics and mathematics, does not use them in solving practical problems.	He has insufficient knowledge of physics and mathematics, partially uses them in solving	He has knowledge of physics and mathematics, uses them to solve practical problems.	He has full knowledge of physics and mathematics, independently uses them to solve practical problems.

problems.		practical problems.		
Competence: OPK-2				
Results of the internship: <i>Indicator:</i> ID-1 OPK-2 finds and critically analyzes the information necessary to solve the problem.	Does not analyze the information necessary to solve practical problems.	Poorly analyzes the information necessary to solve practical problems.	Analyzes the information necessary to solve practical problems.	Independently and consciously analyzes the information necessary to solve practical problems.
Results of the internship: <i>Indicator:</i> ID-2 OPK-2 develops a solution to a specific problem, choosing the best option, evaluating its advantages and disadvantages.	Does not solve specific problems of practice, does not evaluate the result of the solution.	Some of the tasks of practice are not complete, poorly appreciates the result of the solution.	Solves specific problems of practice, evaluates the result of the solution.	She solves all the problems of practice, evaluates the result of the solution.
Results of the internship: <i>Indicator:</i> ID-3 OPK-2 understands the basic methods and means of conducting experimental research, standardization and certification systems.	Does not understand the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research.	Partially understands the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research.	Understands the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research.	Fully understands the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research.

Results of the internship: <i>Indicator:</i> ID-4 OPK-2 selects methods and means of measurement and conducts experimental research.	Does not choose the main methods of conducting experimental research, methods and means of measuring and conducting experimental research.	Partially chooses the main methods of conducting experimental research, methods and means of measuring and conducting experimental research.	Selects the main methods of conducting experimental research, methods and means of measuring and conducting experimental research.	Independently chooses the main methods of conducting experimental research, methods and means of measuring and conducting experimental research.
Results of the internship: <i>Indicator:</i> ID-5 OPK-2 is proficient in the methods of processing and presenting the data obtained and assessing the error of measurement results.	Does not use the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research.	Insufficiently applies the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research.	Applies the main methods of conducting experimental research, methods and means of measuring and conducting experimental research.	In solving practical problems, he applies the main methods of conducting experimental research, methods and means of measuring and conducting experimental research.
Competence: OPK-3				
Results of the internship: <i>Indicator:</i> ID-1 OPK-3 understands the basic patterns of information transmission in infocommunication systems, the main types of signals used in telecommunication systems, the features of the transmission of various signals through channels and paths of telecommunication systems.	Does not understand the basic patterns of information transmission in information and communication systems	Poorly understands the basic patterns of information transfer in information and communication systems	Understands the basic patterns of information transfer in information and communication systems	Fully understands the basic patterns of information transfer in infocommunication systems

Results of the internship: <i>Indicator:</i> ID-2 _{OPK-3} understands the principles, basic algorithms and devices of digital signal processing; the principles of building telecommunication systems of various types and methods of information distribution in communication networks.	Does not understand the principles, basic algorithms and devices of digital signal processing.	Does not sufficiently understand the principles, basic algorithms and devices of digital signal processing.	Understands the principles, basic algorithms and devices of digital signal processing.	Fully understands the principles, basic algorithms, and devices of digital signal processing.
Results of the internship: <i>Indicator:</i> ID-3 _{OPK-3} solves data processing problems using computer technology.	It does not solve the problems of searching and processing data using computer technology	Poorly solves the problems of data retrieval and processing with the help of computer technology	Solves problems of data retrieval and processing using computer technology	Independently solves practical problems of data search and processing using computer technology
Results of the internship: <i>Indicator:</i> ID-4 _{OPK-3} builds probabilistic models for specific processes, carries out the necessary calculations within the framework of the built model.	Does not build models for specific processes, does not carry out the necessary calculations	Insufficiently builds models for specific processes, carries out the necessary calculations	Builds models for specific processes, performs the necessary calculations	Independently builds models for specific processes, conducts the necessary calculations
Results of the internship: <i>Indicator:</i> ID-5 _{OPK-3} has methods and skills for ensuring	Poorly observes the basic requirements of information security when solving practical problems by	Partially complies with the basic requirements of information security when solving practical problems by	Observes the basic requirements of information security when solving practical problems by means of	Independently observes the basic requirements of information security when solving practical problems by

information security.	means of computer technology	means of computer technology	computer technology	means of computer technology
Competence: OPK-4				
Results of the internship: <i>Indicator:</i> ID-1 OPK-4 uses information and communication technologies when searching for the necessary information.	Does not use information and communication technologies in the search for the necessary information to solve the tasks of the practice.	Partially implements the use of information and communication technologies in the search for the necessary information to solve the tasks of the practice.	Carries out the use of information and communication technologies in the search for the necessary information to solve the tasks of the practice.	Independently and competently implements the use of information and communication technologies in the search for the necessary information to solve the tasks of the practice.
Results of the internship: <i>Indicator:</i> ID-2 OPK-4 designs a solution to a specific project task, choosing the best way to solve it, based on the current legal norms and available resources and restrictions.	Does not develop a solution to the tasks of practice.	Poorly develops a solution to the tasks of practice.	Develops a solution to the tasks of the practice.	Fully develops a solution to the tasks of practice.
Results of the internship: <i>Indicator:</i> ID-3 OPK-4 understands modern interactive software systems and basic methods of processing experimental data, including the use of standard software, general	Does not use the capabilities of modern software systems and the basic methods of processing experimental data in the process of solving practical problems.	In the process of solving some practical problems, it insufficiently uses the capabilities of modern software complexes and the main methods of processing experimental data.	In the process of solving practical problems, it uses the capabilities of modern software systems and the main methods of processing experimental data.	In the process of solving all practical problems, it uses the capabilities of modern software systems and the main methods of processing experimental data.

and special-purpose software packages.				
Results of the internship: <i>Indicator:</i> ID-4 _{OPK-4} uses the capabilities of computer technology and software to solve problems of control and algorithmization of information processing processes.	Does not use the capabilities of computer technology and software in the process of solving practical problems	Poorly uses the capabilities of computer technology and software in the process of solving practical problems	Uses the capabilities of computer technology and software in the process of solving practical problems	Fully uses the capabilities of computer technology and software in the process of solving practical problems
Results of the internship: <i>Indicator:</i> ID-5 _{OPK-4} is proficient in methods of computer modeling of physical processes in the transmission of information, engineering and computer graphics techniques.	Does not use methods of computer modeling of physical processes in the process of solving problems	Poorly applies methods of computer modeling of physical processes in the process of solving problems	Applies methods of computer modeling of physical processes in the process of solving problems	Fully applies the methods of computer modeling of physical processes in the process of solving problems
Competence: OPK-5				
Results of the internship: <i>Indicator:</i> ID-1 _{OPK-5} selects programming languages and languages for working with databases, environments for the development	Does not understand and applies the environment for the development of information systems and technologies, based on the existing tasks.	Poorly understands and applies the environment for the development of information systems and technologies, based on the existing tasks.	Understands and applies information systems and technology development environments based on existing tasks.	Fully understands and applies information systems and technology development environments based on existing tasks.

of information systems and technologies, based on the existing tasks.				
Results of the internship: <i>Indicator:</i> ID-2 OPK-5 reads the codes of software products written in mastered programming languages and makes the necessary changes.	Does not understand and applies the basics of programming to solve practical problems.	Poorly understands and applies the basics of programming when solving practical problems.	Understands and applies the basics of programming when solving practical problems.	Fully understands and applies the basics of programming when solving practical problems.
Results of the internship: <i>Indicator:</i> ID-3 OPK-5 develops original algorithms and computer programs suitable for practical application.	Does not build algorithms for solving practical problems.	Insufficiently builds algorithms for solving practical problems.	Builds algorithms for solving practical problems.	Independently builds algorithms for solving practical problems.

Criteria for assessing competencies

An "excellent" grade is given to a student if the student has shown a deep, solid mastery of the internship program, while the tasks are completed in full, without errors with high quality. At the same time, he fully fulfills the tasks of the internship as part of a group, observing the rules of social interaction. Applies in full effective methods of teamwork to obtain optimal work results and their analysis. Applies information technologies and foresight technologies. Independently performs the assigned tasks of the internship, and also fully ensures their implementation based on the monitoring of teamwork. Independently and fully complies with the safety requirements at the workplace when performing the tasks of the practice. Is fully familiar with the methods of accumulating, transmitting and processing information. Fulfills the tasks of the practice in full, choosing an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms. Fully searches for the necessary information in the process of solving standard communicative tasks in the state and foreign languages, and also uses information and communication technologies to improve the efficiency of professional interaction. Carries out a full search for the information necessary to solve the tasks, identifying and analyzing information about the cultural characteristics and traditions of various social groups, to choose a strategy for interaction with their carriers. Fulfills the tasks of the practice in full, demonstrates a confident and respectful attitude to the historical heritage and socio-cultural traditions of various social groups. Independently fulfills the tasks of the practice, as well as confidently and correctly chooses ways of constructive interaction with

people, taking into account their socio-cultural characteristics in order to successfully perform professional tasks and strengthen social integration. Independently Understands the fundamental laws of nature and basic physical mathematical laws and understand how to apply them in solving practical problems. Independently and consciously analyzes the information necessary for solving practical problems. Solves all practical problems, evaluates the result of the solution. Fully understands the basic methods of experimental research, methods and means of measurement and experimental research. Independently chooses the main methods of conducting experimental research, methods and means of conducting experimental research. Independently chooses the main methods of conducting experimental research, methods and means of measuring and conducting experimental research. Fully understands the basic patterns of information transmission in information and communication systems. Fully understands the principles, basic algorithms and devices of digital signal processing. Independently solves practical problems on data search and processing with the help of computer technology. Independently builds models for specific processes, conducts the necessary calculations. Independently observes the basic requirements of information security when solving practical problems by means of computer technology. Independently and competently implements the use of information and communication technologies in the search for the necessary information to solve the tasks of practice. Fully develops the solution of the tasks of practice. Uses the capabilities of modern software complexes and the main methods of processing experimental data in the process of solving all practical problems. Fully uses the capabilities of computer technology and software in the process of solving practical problems. Fully applies the methods of computer modeling of physical processes in the process of solving problems. Fully understands and applies the environment for the development of information systems and technologies, based on the existing tasks. Fully understands and applies the basics of programming in solving practical problems.

A "good" grade is given to a student if the student has shown a solid knowledge of the program educational material, while the tasks of the practice are completed competently, in a sufficiently complete volume, some inaccuracies or insignificant errors were made. At the same time, performs the tasks of the practice as part of a group, observing the rules of social interaction. Applies effective methods of teamwork to obtain optimal results of work and their analysis. Applies information technologies and foresight technologies. Fulfills the tasks of the practice, and also ensures their implementation on the basis of monitoring teamwork. Understands the general characteristics of ensuring safety and sustainable development in the field of infocommunications. Takes measures to prevent possible threats to life. Observes safety requirements at the workplace when performing practice tasks. Is familiar with the methods of accumulating, transmitting and processing information. Fulfills the tasks of the practice, choosing an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms. Applies effective methods of searching for the necessary information in the process of solving standard communicative tasks in the state and foreign languages, and also uses information and communication technologies to increase the effectiveness of professional interaction. Fulfills the tasks of the practice, as well as evaluates the effectiveness of the applied communication technologies in professional interaction in the state and foreign languages, selects the optimal ones. Searches for the information necessary to solve the tasks, identifying and analyzing information about the cultural characteristics and traditions of various social groups, to choose a strategy for interaction with their speakers. Fulfilling the tasks of the practice, demonstrates respect for the historical heritage and socio-cultural traditions of various social groups. Fulfilling the tasks of the practice, chooses ways of constructive interaction with people, taking into account their socio-cultural characteristics in order to successfully fulfill professional tasks and strengthen social integration. Analyzes various socio-cultural trends, facts and phenomena on the basis of a holistic view of the foundations of the universe and the prospects for its development.

Understands the fundamental laws of nature and the basic physical mathematical laws. Applies the fundamental laws of nature and the basic physical mathematical laws in solving practical problems. Has knowledge of physics and mathematics, uses them in solving practical problems. Analyzes the information necessary to solve practical problems. Solves specific practical problems,

evaluates the result of the solution. Understands the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research. Chooses the main methods of conducting experimental research, methods and means of measuring and conducting experimental research. Applies the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research. Understands the basic laws of information transmission in information and communication systems. Understands the principles, basic algorithms and devices of digital signal processing. Solves problems of data retrieval and processing using computer technology. Builds models for specific processes, carries out the necessary calculations. Observes the basic requirements of information security when solving practical problems by means of computer technology. Applies information and communication technologies when searching for the necessary information to solve the tasks of practice. • Develops solutions to the tasks of practice. • Uses the capabilities of modern software systems and the main methods of processing experimental data in the process of solving practical problems. • Uses the capabilities of computer technology and software in the process of solving practical problems. • Applies methods of computer modeling of physical processes in the process of solving problems. • Understands and applies the environments for the development of information systems and technologies, based on existing tasks. • Understands and applies the basics of programming in solving practical problems. • Builds algorithms for solving practical problems.

A "satisfactory" grade is given to a student if the student has shown knowledge of only the main part of the educational material of the internship without its particular details, while the tasks are not completed in full, mistakes or a number of minor inaccuracies are made. At the same time, he partially fulfills the tasks of the practice as part of a group, observing the rules of social interaction. Partially applies effective methods of teamwork to obtain optimal work results and their analysis. Applies information technologies and foresight technologies. Does not sufficiently fulfill the tasks of the practice, and also partially ensures their implementation on the basis of monitoring teamwork. Does not take timely measures to prevent possible threats to life. Does not sufficiently comply with safety requirements at the workplace when performing practical tasks. Is familiar with the methods of accumulating, transmitting and processing information. Partially fulfills the tasks of the practice, choosing an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms. Partially searches for the necessary information in the process of solving standard communicative tasks in the state and foreign languages, and also uses information and communication technologies to improve the effectiveness of professional interaction. Does not sufficiently fulfill the tasks of practice, and also partially evaluates the effectiveness of the applied communication technologies in professional interaction in the state and foreign languages, makes the choice of optimal ones. Partially carries out the search for the information necessary to solve the tasks, identifying and analyzing information about the cultural characteristics and traditions of various social groups, to choose a strategy for interaction with their carriers. Partially fulfills the tasks of the practice, demonstrates respect for the historical heritage and socio-cultural traditions of various social groups. Does not fulfill the tasks of the practice insufficiently, and also partially chooses ways of constructive interaction with people, taking into account their socio-cultural characteristics, in order to successfully fulfill professional tasks and strengthen social integration. Does not confidently analyze various socio-cultural trends, facts and phenomena on the basis of a holistic view of the foundations of the universe and the prospects for its development.

Insufficiently understands the fundamental laws of nature and the basic physical mathematical laws. Partially applies the fundamental laws of nature and the basic physical mathematical laws in solving practical problems. Insufficiently possesses knowledge of physics and mathematics, partially uses them in solving practical problems. Poorly analyzes the information necessary for solving practical problems. Does not fully understand some practical tasks, poorly evaluates the result of the solution. Partially understands the basic methods of conducting experimental research, methods and means of measurement and conducting experimental research. Partially chooses the main methods of conducting experimental research, methods and means of measurement and conducting experimental

research. Insufficiently applies the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research. Poorly understands the basic patterns of information transmission in information and communication systems. Insufficiently understands the principles, basic algorithms and devices of digital signal processing. Poorly solves the problems of searching and processing data using computer technology. Insufficiently builds models for specific processes, carries out the necessary calculations. Partially complies with the basic requirements of information security when solving practical problems by means of computer technology. Partially applies information and communication technologies in the search for the necessary information to solve the tasks of practice. Poorly develops the solution of the set tasks of practice. Insufficiently uses the capabilities of modern software systems and the basic methods of processing experimental data in the process of solving some practical problems. Poorly uses the capabilities of computer technology and software in the process of solving practical problems. Poorly applies methods of computer modeling of physical processes in the process of solving problems. Poorly understands and applies the environments for the development of information systems and technologies based on existing tasks. Poorly understands and applies the basics of programming in solving practical problems. Insufficiently builds algorithms for solving practical problems.

An "unsatisfactory" grade is given to a student who does not know a significant part of the program material of the internship, while the tasks are not completed in full, significant errors were made. An unsatisfactory grade is also given if there is no report on the completed task. At the same time, does not cope with the tasks of the internship as part of a group, observing the rules of social interaction. Does not implement effective methods of teamwork to obtain optimal work results and their analysis. Poorly applies information technologies and foresight technologies. Does not fulfill the tasks of the internship, and also does not ensure their implementation on the basis of monitoring teamwork. Does not understand the general characteristics of ensuring security and sustainable development in the field of infocommunications. Does not take measures to prevent possible threats to life. Does not comply with safety requirements at the workplace when performing the tasks of the practice. Is familiar with the methods of accumulating, transmitting and processing information. Does not cope with the implementation of the tasks of the practice and the choice of an acceptable style of business communication in the state and foreign languages, verbal and non-verbal means of interaction with partners in oral and written forms. carries out a sufficient search for the necessary information in the process of solving standard communicative tasks in the state and foreign languages, and also uses information and communication technologies to increase the effectiveness of professional interaction. Does not fulfill the tasks of practice, and also does not evaluate the effectiveness of the applied communication technologies in professional interaction in the state and foreign languages, makes the choice of optimal ones. Does not cope with the search for information necessary to solve the tasks, identification and analysis of information about the cultural characteristics and traditions of various social groups, for choosing a strategy for interaction with their carriers. Does not sufficiently fulfill the tasks of practice, does not demonstrate respect for the historical heritage and socio-cultural traditions of various social groups. Does not fulfill the tasks of practice, and also does not choose ways of constructive interaction with people, taking into account their socio-cultural characteristics in order to successfully perform professional tasks and strengthen social integration. Does not analyze various socio-cultural trends, facts and phenomena on the basis of a holistic view of the foundations of the universe and the prospects for its development.

Does not understand the fundamental laws of nature and the basic physical mathematical laws. Does not apply the fundamental laws of nature and the basic physical mathematical laws when solving practical problems. Does not have knowledge of physics and mathematics, does not use them in solving practical problems. Does not analyze the information necessary for solving practical problems. Does not solve specific practical problems, does not evaluate the result of the solution. Does not understand the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research. Does not choose the main methods of conducting experimental research, methods and means of measuring and conducting experimental research. Does

not apply the basic methods of conducting experimental research, methods and means of measuring and conducting experimental research. Does not understand the basic laws of information transmission in information and communication systems. Does not understand the principles, basic algorithms and devices of digital signal processing. Does not solve problems of data search and processing using computer technology. Does not build models for specific processes, does not carry out the necessary calculations. Poorly observes the basic requirements of information security when solving practical problems by means of computer technology. Does not use information and communication technologies in the search for the necessary information to solve the tasks of the practice. Does not develop a solution to the tasks of the practice. Does not use the capabilities of modern software systems and the main methods of processing experimental data in the process of solving practical problems. Does not use the capabilities of computer technology and software in the process of solving practical problems. Does not apply methods of computer modeling of physical processes in the process of solving problems. Does not understand and applies the environment for the development of information systems and technologies based on the existing tasks. Does not understand and applies the basics of programming in solving practical problems. Does not build algorithms for solving practical problems.

2. Assessment tools for educational introductory practice

2.1. Tasks that allow you to assess the knowledge gained in practice

Emerging competencies, indicators		Task Statement	
Competency code	Wording		
UK-3 ID-1 UK-3 ID-2 UK-3 ID-3 UK-3	Able to carry out social interaction and fulfill his role in a team	Task 1	Study of literature on a given topic.
		Task 2	Choosing a method for performing experimental work.
UK-4 ID-1 UK-4 ID-2 UK-4 ID-3 UK-4	Is able to carry out business communication in oral and written forms in the state language of the Russian Federation and a foreign language(s)	Task 3	Analysis of domestic and world experience on the subject of the study.
UK-5 ID-1 UK-5 ID-2 UK-5 ID-3 UK-5 ID-4 UK-5	Is able to perceive the intercultural diversity of society in socio-historical, ethical and philosophical contexts		
UK-8 ID-1 UK-8 ID-2 UK-8 ID-3 UK-8	Is able to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the sustainable development of society, including in the threat and		

	occurrence of emergencies and military conflicts		
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2.2. Tasks that allow you to assess the skills and abilities acquired in practice

Emerging competencies, indicators		Task Statement	
Competency code	Wording		
UK-3 ID-1 UK-3 ID-2 UK-3 ID-3 UK-3	Able to carry out social interaction and fulfill his role in a team	Task 1	1. Explore the interface and basic features of the Electronics Workbench experimental modeling environment.
UK-4 ID-1 UK-4 ID-2 UK-4 ID-3 UK-4	Is able to carry out business communication in oral and written forms in the state language of the Russian Federation and a foreign language(s)	Task 2	2. To perform circuit modeling of the main functional elements and basic devices of ICTiSS.
UK-5 ID-1 UK-5 ID-2 UK-5 ID-3 UK-5 ID-4 UK-5	Is able to perceive the intercultural diversity of society in socio-historical, ethical and philosophical contexts	Task 3	3. To conduct an experimental study of the developed models of circuit design solutions according to the given method and to analyze the results.
		Task 4	4. Get acquainted with the basics of Boolean algebra and basic logic gates using the Electronics Workbench virtual laboratory.
UK-8 ID-1 UK-8 ID-2UK-8 ID-3 UK-8	Is able to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the		4.1 Analysis of the main logical elements.
			4.2 Experimental study and confirmation of the laws of Boolean algebra
			4.3 Synthesis of given logic devices
		Task 5	5 To simulate and study combination digital devices using the Electronics Workbench virtual laboratory.

	sustainable development of society, including in the threat and occurrence of emergencies and military conflicts		5.1 Modeling and Investigation of Arithmetic Adders of a Given Bit Depth
			5.2 Modeling and Investigation of Specified Encoders and Decoders
			5.3 Simulation and study of specified multiplexers and de-multiplexers
		Task 6	6 Implement simulation and investigation of sequential digital devices using the Electronics Workbench virtual laboratory.
			6.1 Modeling and investigation of specified triggers
			6.2 Modeling and Investigation of Specified Counters
			6.3 Modeling and Investigation of Specified Registers
		Task 7	Preparation of a presentation (Power Point) on a given topic.
		Task 8	Preparation and presentation on the results of the work.

3. Methodological materials that determine the assessment procedures and characterize the stages of competence formation

The procedure for passing educational introductory practice includes the following stages: preparatory, introductory and final.

At each stage of the internship, the process of competence formation is monitored currently.

The tasks offered to the student allow you to check the competencies of UK-3, UK-4, UK-5, UK-8, OPK-1, OPK-2, OPK-3, OPK-4, OPK-5.

During the internship, the student must, according to the calendar schedule, complete the tasks of the internship, qualitatively and correctly complete the individual task agreed with the teacher, keep a diary of the internship and draw up a report in printed form at the end of the internship. The documents submitted for defense must be printed and signed.

When checking tasks, the following are evaluated:

- quality, accuracy of calculations and rationality of task performance;
- compliance with the requirements of methodological guidelines.

When checking the report, the

- the quality of the report,
- compliance of the submitted materials with the tasks,
- the content of the report,
- compliance with the established requirements.

Based on the results of the speech and the prepared presentation, the student justifies the results of the work performed within the framework of the educational practice and confirms with a list of submitted documents:

- individual task,
- diary,
- report.