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ФИО: Ястребов Олег Александрович
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**Federal State Autonomous Educational Institution
Higher Education "Peoples' Friendship University of Russia named after Patrice
Lumumba"**

Academy of Engineering

(name of the main educational unit (MEU) – developer of the educational program of higher education)

INTERNSHIP PROGRAM

Technological practice

(name of practice)

Industrial practice

(type of practice: educational, industrial)

Recommended by the ICSC for the field of study/specialty:

27.03.04 "Control in Technical Systems"

(code and name of the training area/specialty)

Practical training of students is carried out within the framework of the implementation of the main professional educational program of higher education (EP HE):

Data Science and Space Systems / Data Science and Space Systems

(name (profile/specialization) of the educational institution of higher education)

1. PURPOSE OF THE INTERNSHIP

The purpose of the Technological Practice is to deepen, systematize and consolidate theoretical knowledge, as well as to acquire professional skills and abilities in the field of conducting scientific research in solving practical problems related to the field of information technology, computing technology and modern programming technologies, cybersecurity of information systems, as well as in the field of application of this toolkit with a professional focus on studying management processes in information systems and information protection.

The objectives of the practice are:

- training in the organization and planning of production and technological activities;
- training in collecting, processing, analyzing and systematizing scientific and technical information of world level, including in foreign languages;
- gaining experience in using standard professional software products aimed at solving design, technological and scientific problems;
- gaining experience in active interaction with colleagues in the production and technological sphere of activity;
- preparation of scientific and technical reports, reviews and other materials based on the results of completed research.

2. REQUIREMENTS TO LEARNING RESULTS AFTER COMPLETING THE INTERNSHIP

The implementation of Technological Practice is aimed at developing the following competencies (parts of competencies) in students:

Table 2.1. List of competencies developed in students during internship (learning outcomes based on internship results)

Cipher	Competence	Indicators of Competence Achievement (within the framework of this discipline)
UC-1	Able to search, critically analyze and synthesize information, and apply a systematic approach to solving assigned tasks.	UC-1.1. Analyzes the task, identifying its basic components; UC-1.2. Defines and ranks the information required to solve the assigned task; UC-1.3. Conducts a search for information to solve the assigned task using various types of requests; UC-1.4. Works with scientific texts, distinguishes facts from opinions, interpretations, assessments and substantiates his conclusions using the philosophical conceptual apparatus; UC-1.5. Analyzes and contextually processes information to solve assigned tasks while forming their own opinions and judgments; UC-1.6. Suggests options for solving the problem, analyzes the possible consequences of their use; UC-1.7. Analyzes ways of solving problems of worldview, moral and personal character based on the use of basic philosophical ideas and categories in their historical development and socio-cultural context.
UC-2	Able to define a range of tasks within the framework of a set	UC-2.1. Formulates a problem, the solution of which is directly related to achieving the project goal;

Cipher	Competence	Indicators of Competence Achievement (within the framework of this discipline)
	goal and select optimal ways to solve them, based on current legal regulations, available resources and limitations	<p>UC-2.2. Defines the connections between the tasks set and the expected results of their solution;</p> <p>UC-2.3. Within the framework of the set tasks, determines the available resources and limitations, current legal norms;</p> <p>UC-2.4. Analyzes the project implementation schedule as a whole and selects the optimal way to solve the tasks set, based on current legal regulations and available resources and limitations;</p> <p>UC-2.5 Monitors the progress of the project, adjusts the schedule in accordance with the monitoring results.</p>
UC-3	Able to interact socially and fulfill his/her role in a team	<p>UC-3.1. Determines his/her role in the team based on the strategy of cooperation to achieve the set goal;</p> <p>UC-3.2. Formulates and takes into account in its activities the behavioral characteristics of groups of people, identified depending on the set goal;</p> <p>UC-3.3. Analyzes the possible consequences of personal actions and plans his actions to achieve a given result;</p> <p>UC-3.4. Carries out the exchange of information, knowledge and experience with team members;</p> <p>UC-3.5. Argues his point of view regarding the use of ideas of other team members to achieve the set goal;</p> <p>UC-3.6. Participates in teamwork to carry out assignments.</p>
UC-6	Able to manage their time, build and implement a trajectory of self-development based on the principles of lifelong education	<p>UC-6.1. Controls the amount of time spent on specific activities</p> <p>UC-6.2. Develops tools and methods for time management when performing specific tasks, projects, and goals</p> <p>UC-6.3. Analyzes his resources and their limits (personal, situational, temporary, etc.) for the successful completion of the assigned task.</p> <p>UC-6.4. Finds and uses sources of additional information to improve the level of general and professional knowledge</p> <p>UC-6.5. Analyzes the main opportunities and tools of continuous education in relation to their own interests and needs, taking into account the conditions, resources, personal capabilities, stages of career growth, time perspective of development of activities and requirements of the labor market</p> <p>UC-6.6. Defines the tasks of self-development, goals and priorities of professional growth</p> <p>UC-6.7. Distributes tasks into long-, medium- and short-term ones with justification of relevance and analysis of resources for their implementation</p>
UC-12	Capable of: searching for the necessary sources of information and data, perceiving, analyzing, memorizing and transmitting information using digital means, as well as using algorithms when working with data obtained from	<p>UC-12.1. Searches for the necessary sources of information and data, perceives, analyzes, remembers and transmits information using digital means, as well as using algorithms when working with data obtained from various sources in order to effectively use the information obtained to solve problems</p> <p>UC-12.2. Conducts an assessment of information, its reliability, builds logical conclusions based on incoming information and data</p>

Cipher	Competence	Indicators of Competence Achievement (within the framework of this discipline)
	various sources in order to effectively use the information obtained to solve problems; evaluating information, its reliability, building logical conclusions based on incoming information and data	
GPC-1	Able to analyze the tasks of professional activity based on provisions, laws and methods in the field of natural sciences and mathematics	<p>GPC-1.1 Has basic knowledge obtained in the field of mathematics and/or natural sciences</p> <p>GPC-1.2 Knows how to use them in professional activities</p> <p>GPC-1.3 Has the skills to select methods for solving professional problems based on theoretical knowledge</p>
GPC-2	Able to formulate tasks of professional activity based on knowledge, specialized sections of mathematical and natural science disciplines (modules)	<p>GPC-2.1 Has a command of mathematical methods, programming fundamentals and specialized programming systems for implementing algorithms for solving applied problems</p> <p>GPC-2.2 Able to select and adapt mathematical methods and software to solve practical problems</p> <p>GPC-2.3 Possesses skills in developing and implementing algorithms for solving applied problems in the field of professional activity</p>
GPC-3	Able to use fundamental knowledge to solve basic management problems in technical systems in order to improve in professional activities	<p>GPC-3.1 Knows the theoretical foundations and principles of mathematical modeling</p> <p>GPC-3.2 Able to develop and use methods of mathematical modeling, information technologies to solve problems of applied mathematics</p> <p>GPC-3.3 Possesses practical skills in solving problems of applied mathematics, methods of mathematical modeling, information technologies and the basics of their use in professional activities, skills of professional thinking and an arsenal of methods and approaches necessary for the adequate use of methods of modern mathematics in theoretical and applied problems</p>
GPC-4	Capable of assessing the effectiveness of management systems developed on the basis of mathematical methods	<p>GPC-4.1 Knows the basic requirements of information security, existing information and communication technologies</p> <p>GPC-4.2 Able to solve professional tasks using information and communication technologies and taking into account the basic requirements of information security</p> <p>GPC-4.3 Possesses skills in using existing information technologies to solve professional tasks</p>
GPC-5	Capable of solving problems of development of science, engineering and technology in the field of management in technical systems, taking into account legal regulation in the field of intellectual	<p>GPC-5.1 Knows the theoretical foundations of digital technologies, the basics of modeling objects of professional activity, the basics of data analysis and information presentation</p> <p>GPC-5.2 Able to solve professional tasks using existing methods of modeling, data analysis, and information presentation</p>

Cipher	Competence	Indicators of Competence Achievement (within the framework of this discipline)
	property	GPC-5.3 Possesses skills in developing algorithms and computer programs suitable for practical application
GPC-9	Able to perform experiments using specified methods and process the results using modern information technologies and technical means.	GPC-9.1 Knows modern information technologies and technical means GPC-9.2 Able to apply modern information technologies and technical means to process experimental results GPC-9.3 Has mastered modern information technologies and technical means for performing experiments and processing results
GPC-10	Capable of developing (based on current standards) technical documentation (including in electronic form) for routine maintenance of control, automation and management systems and equipment	GPC-10.1 Knows current standards for developing technical documentation for routine maintenance of control, automation and management systems and equipment GPC-10.2 Knows the basic approaches to developing technical documentation (including in electronic form) for routine maintenance of control, automation and management systems and equipment GPC-10.3 Possesses skills in developing (based on current standards) technical documentation (including in electronic form) for routine maintenance of control, automation and management systems and equipment
GPC-11	Able to understand the principles of operation of modern information technologies and use them to solve problems of professional activity	GPC-11.1 Knows digital methods and technologies used in professional activities GPC-11.2 Able to apply digital methods and technologies in professional activities to study and model objects of professional activity, analyze data, and present information GPC-11.3 Confidently uses digital methods and technologies in professional activities (in the field of management in technical systems) for: studying and modeling objects of professional activity, data analysis, and information presentation
PC-1	Capable of collecting, processing and interpreting modern scientific research data necessary to draw conclusions on relevant scientific research, including Earth remote sensing data	PC-1.1 Knows modern methods of collecting, processing and interpreting modern scientific research data necessary to form conclusions on relevant scientific research PC-1.2 Able to apply modern methods and tools for processing and interpreting scientific research data PC-1.3 Possesses the basic skills of collecting, processing and interpreting modern scientific research data necessary for drawing conclusions on relevant scientific research
PC-3	Capable of carrying out work on processing and analyzing information in the field of application of mathematical methods and information technologies in the field of application of remote sensing data of the Earth from space	PC-3.1 Knows the basic concepts in the field of application of mathematical methods and information technologies and application of remote sensing space systems PC-3.2 Able to solve analytical problems that offer a choice from a variety of relevant methods for solving problems, has skills in working with geographic information systems software packages

Cipher	Competence	Indicators of Competence Achievement (within the framework of this discipline)
		PC-3.3 Possesses practical skills in solving problems related to obtaining, processing and applying remote sensing data of the Earth from space
PC-4	Able to formulate, analyze and solve engineering problems in the field of ballistics, motion mechanics and spacecraft motion control based on professional knowledge	PC-4.1 Knows the basic concepts and basic algorithms for solving problems in the field of ballistics, motion mechanics and motion control based on automated and automatic systems PC-4.2 Able to solve engineering problems of an analytical nature in the field of ballistics, motion mechanics and control of spacecraft motion based on professional knowledge PC-4.3 Possesses skills in using mathematical methods for processing information obtained as a result of experimental research, basic methods for analyzing the mechanics of motion and controlling the motion of spacecraft based on standard methods and software packages
PC-5	Able to develop, debug, test performance, modify software; apply software design methods and tools, develop and coordinate software documentation	PC-5.1 Knows existing system and application software, methods of designing and developing software, structures and databases, software interfaces. Knows regulatory and technical documentation for developing software documentation for software PC-5.2 Can apply methods and tools for designing software, data structures, databases, and software interfaces. Can analyze regulatory and technical documentation for developing software documentation. PC-5.3 Possesses basic skills in technologies for development, debugging, testing the functionality and modification of system application software, and upgrading technical solutions for software development

3. PLACE OF PRACTICE IN THE STRUCTURE OF THE EDUCATIONAL INSTITUTION

Technological practice refers to the optional component of the compulsory part of block 2 of the curriculum.

As part of the educational program, students also master disciplines and/or other practices that contribute to the achievement of planned learning outcomes following the completion of technological practice.

Table 3.1. List of components of the educational program of higher education that contribute to the achievement of planned learning outcomes following the completion of the internship

Cipher	Name of competence	Previous courses/modules, practices*	Subsequent disciplines/modules, practices*
UC-1	Able to search, critically analyze and synthesize information, and apply a systematic approach to solving assigned tasks.	History of Russia / History of Russia Jurisprudence / Legal Science Philosophy / Philosophy	Undergraduate Training / Pre- graduation practice State final certification

Cipher	Name of competence	Previous courses/modules, practices*	Subsequent disciplines/modules, practices*
		Introduction to the Specialty / Introduction to the Specialty Business Ethics / Business Ethics Sociology / Sociology Cultural Studies Research Work / Research work	
UC-2	Able to define a range of tasks within the framework of a set goal and select optimal ways to solve them, based on current legal regulations, available resources and limitations	Jurisprudence / Legal Science Fundamentals of Project Activities Research Work / Research work	Undergraduate Training / Pre-graduation practice State final certification
UC-3	Able to interact socially and fulfill his/her role in a team	Psychology and Pedagogy / Psychology and Pedagogy Fundamentals of Project Activities Research Work / Research work	Undergraduate Training / Pre-graduation practice State final certification
UC-6	Able to manage their time, build and implement a trajectory of self-development based on the principles of lifelong education	History of Russia / History of Russia Fundamentals of Engineering Economics and Management / Fundamentals of Engineering Economics and Management Psychology and Pedagogy / Psychology and Pedagogy Physical Culture / Physical Culture Introduction to the Specialty / Introduction to the Specialty Fundamentals of Project Activities / Fundamentals of Project Activities Research Work / Research work	Undergraduate Training / Pre-graduation practice State final certification
UC-12	Capable of: searching for the necessary sources of information and data, perceiving, analyzing,	Analysis of Geoinformation Data / Analysis of Geoinformation Data	Undergraduate Training / Pre-graduation practice State final certification

Cipher	Name of competence	Previous courses/modules, practices*	Subsequent disciplines/modules, practices*
	memorizing and transmitting information using digital means, as well as using algorithms when working with data obtained from various sources in order to effectively use the information obtained to solve problems; evaluating information, its reliability, building logical conclusions based on incoming information and data	Automatic Control Theory Optimal Control Methods / Methods of optimal control Fundamentals of information security and cyber resilience / Fundamentals of information security and cyber resilience Fundamentals of Information Security and Cyber Resilience Research Work / Research work	
GPC-1	Able to analyze the tasks of professional activity based on provisions, laws and methods in the field of natural sciences and mathematics	Mathematical Analysis / Mathematical Analysis Algebra and Geometry / Algebra and Geometry Physics / Physics Complex Analysis Space Flight Mechanics / Space Flight Mechanics Research Work / Research Work	Undergraduate Training / Pre-graduation practice State final certification
GPC-2	Able to formulate tasks of professional activity based on knowledge, specialized sections of mathematical and natural science disciplines (modules)	Mathematical Analysis / Mathematical Analysis Algebra and Geometry / Algebra and Geometry Equations of Mathematical Physics / Equations of Mathematical Physics Space Flight Mechanics / Space Flight Mechanics Analysis of Geoinformation Data / Analysis of Geoinformation Data Numerical Methods / Numerical Methods Automatic Control Theory Research Work / Research work	Undergraduate Training / Pre-graduation practice State final certification

Cipher	Name of competence	Previous courses/modules, practices*	Subsequent disciplines/modules, practices*
GPC-3	Able to use fundamental knowledge to solve basic management problems in technical systems in order to improve in professional activities	Mathematical Analysis / Mathematical Analysis Algebra and Geometry / Algebra and Geometry Theory of Probability and Mathematical Statistics Differential Equations / Differential Equations Complex Analysis Equations of Mathematical Physics / Equations of Mathematical Physics Theoretical Mechanics / Theoretical Mechanics Space Flight Mechanics / Space Flight Mechanics Analysis of Geoinformation Data / Analysis of Geoinformation Data Numerical Methods / Numerical Methods Automatic Control Theory Optimal Control Methods / Methods of optimal control Research Work / Research work	Undergraduate Training / Pre- graduation practice State final certification
GPC-4	Capable of assessing the effectiveness of management systems developed on the basis of mathematical methods	Differential Equations / Differential Equations Analysis of Geoinformation Data / Analysis of Geoinformation Data Research Work / Research work	Undergraduate Training / Pre- graduation practice State final certification
GPC-5	Capable of solving problems of development of science, engineering and technology in the field of management in technical systems, taking into account legal regulation in the field of intellectual property	Fundamentals of Artificial Intelligence / Fundamentals of Artificial Intelligence Theoretical Mechanics / Theoretical Mechanics Analysis of Geoinformation Data /	Undergraduate Training / Pre- graduation practice State final certification

Cipher	Name of competence	Previous courses/modules, practices*	Subsequent disciplines/modules, practices*
		Analysis of Geoinformation Data Automatic Control Theory Research Work / Research work	
GPC-9	Able to perform experiments using specified methods and process the results using modern information technologies and technical means.	Basic military training. Life safety / Basics of military training. Life safety Computer Science and Programming / Computer Science and Programming Analysis of Geoinformation Data / Analysis of Geoinformation Data Optimal Control Methods / Methods of optimal control	Undergraduate Training / Pre-graduation practice State final certification
GPC-10	Capable of developing (based on current standards) technical documentation (including in electronic form) for routine maintenance of control, automation and management systems and equipment	Automatic Control Theory	Undergraduate Training / Pre-graduation practice State final certification
GPC-11	Able to understand the principles of operation of modern information technologies and use them to solve problems of professional activity	Space Flight Mechanics / Space Flight Mechanics Optimal Control Methods / Methods of optimal control	Undergraduate Training / Pre-graduation practice State final certification
PC-1	Capable of collecting, processing and interpreting modern scientific research data necessary to draw conclusions on relevant scientific research, including Earth remote sensing data	Computer Science and Programming / Computer Science and Programming Space Flight Mechanics / Space Flight Mechanics Analysis of Geoinformation Data / Analysis of Geoinformation Data	Undergraduate Training / Pre-graduation practice State final certification

Cipher	Name of competence	Previous courses/modules, practices*	Subsequent disciplines/modules, practices*
		Numerical Methods / Numerical Methods Automatic Control Theory Optimal Control Methods / Methods of optimal control Discrete Mathematics / Discrete Mathematics Discrete Mathematics Virtual and Augmented Reality Technology / Virtual and Augmented Reality Technologies Virtual and augmented reality technologies Research Work / Research work	
PC-3	Capable of carrying out work on processing and analyzing information in the field of application of mathematical methods and information technologies in the field of application of remote sensing data of the Earth from space	Analysis of Geoinformation Data / Analysis of Geoinformation Data Research Work / Research work	Undergraduate Training / Pre- graduation practice State final certification
PC-4	Able to formulate, analyze and solve engineering problems in the field of ballistics, motion mechanics and spacecraft motion control based on professional knowledge	Theoretical Mechanics / Theoretical Mechanics Space Flight Mechanics / Space Flight Mechanics Optimal Control Methods / Methods of optimal control Research Work / Research work	Undergraduate Training / Pre- graduation practice State final certification
PC-5	Able to develop, debug, test performance, modify software; apply software design methods and tools, develop and coordinate software documentation	Analysis of Geoinformation Data / Analysis of Geoinformation Data Fundamentals of information security and cyber resilience / Fundamentals of information security and cyber resilience Fundamentals of Information Security and Cyber Resilience	Undergraduate Training / Pre- graduation practice State final certification

Cipher	Name of competence	Previous courses/modules, practices*	Subsequent disciplines/modules, practices*
		Virtual and Augmented Reality Technology / Virtual and Augmented Reality Technologies Virtual and augmented reality technologies Research Work / Research work	

* - filled in in accordance with the competency matrix and the SUP OP VO

4. SCOPE OF THE INTERNSHIP

The total workload of Technological Practice is 6 credit units (216 academic hours).

5. CONTENT OF THE INTERNSHIP

6. Table 5.1. Contents of practice*

Name of the practice section	Section content (topics, types of practical activities)	Labor intensity, ac.h.
Section 1. Organizational and preparatory.	Receiving an individual assignment for practice from the supervisor	9
	Safety training at the workplace (in the laboratory and/or in production)	9
Section 2. Research	Introductory lecture	4
	Tour of the enterprise	10
	Lectures on the spacecraft control loop	10
	Practical Seminar – Analysis of the CA Management Process	10
	Calculation and graphic part: analysis of individual initial data for calculation, selection and analysis of literature, execution of calculation work	124
	Ongoing monitoring of the internship by the supervisor	14
	Keeping a diary of your internship	8
Preparation of the internship report		9
Preparation for defense and defense of the internship report		9
TOTAL:		216

* - the content of the practice by sections and types of practical training is FULLY reflected in the student's practice report.

6. MATERIALLY-TECHNICAL SUPPORT FOR THE INTERNSHIP

The scientific and educational laboratories of the Department of Mechanics and Control Processes, the premises of partner enterprises where students undergo practical training, are equipped with a local network with Internet access, a projector and an interactive whiteboard.

7. METHOD OF CONDUCTING PRACTICE

Technological practice can be carried out both in RUDN structural divisions or in Moscow organizations (stationary), and at bases located outside of Moscow (visiting).

Conducting an internship at an external organization (outside RUDN) is carried out on the basis of a relevant agreement, which specifies the terms, place and conditions for conducting the internship at the base organization.

The terms of the internship correspond to the period specified in the academic calendar of the EP VO. The terms of the internship may be adjusted upon agreement with the Educational Policy Department and the Department of Organization of Internships and Employment of Students at RUDN.

8. EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT FOR PRACTICE

Main literature:

1. Knuth Donald E. The Art of Computer Programming in 3 volumes – M.: Williams Publishing House, 2008. – T.1 – 720, T.2 – 832 p., T.3 - 824 p.
2. Aho Alfred V., Hopcroft John, Ullman Jeffrey D., Data structures and algorithms - – M.: Williams Publishing House, 2000. – 384 p.
3. MalyUC A.A., Pazizin S.V., Pogozhin N.S. Introduction to information security in automated systems – M.: Goryachaya Liniya-Telecom, 2001, 148 p.
4. Belov E.B., Los V.P., Meshcheryakov R.V., Shelupanov A.A. Fundamentals of information security. Textbook for universities, Moscow: Hotline – Telecom, 2006. - 544 p.
5. Tikhonov V.A., Reich V.V. Information security: conceptual, legal, organizational and technical aspects: textbook. - M.: Helios ARV, 2006.- 528 p.
6. Shan'gin V.F. Information security of computer systems and networks: textbook. Manual. - M.: ID "FORUM": INFRA-M, 2008.-416 p.
7. Moore T., Pym D., Ioannidis C., Economics of Information Security and Privacy, Springer, 2010, - 320 pp.
8. Ensuring information security of business, Edited by Kurilo A.P., Alpina Publishers, 2011, - 392 p.
9. Bondarev V.V. Introduction to information security of automated systems (2nd edition). - M.: Bauman Moscow State Technical University. 2018. - 252 p.
10. Organizational and legal support of information security. edited by A.A. Alexandrov, M.P. Sychev – M.: Bauman Moscow State Technical University. 2018. – 292s.
11. MalyUC A.A. Fundamentals of security policy for critical information infrastructure systems. - M.: Hotline - Telecom, 2018. - 314 p.

Further reading:

1. Torokin A.A. Fundamentals of engineering and technical protection of information. – M.: Os’-89, 1998.-336 p.
2. Devyanin P.N., Mikhalsky O.O., Pravikov D.I., Shcherbakov A.Yu., Theoretical foundations of computer security, – M: Radio and communication, 2000. -192 p.
3. Pyarin V.A., Kuzmin A.S., Smirnov S.N. Security of electronic business. – M.: Helios ARB, 2002. – 432 p.
4. Snytnikov A.A. Licensing and certification in the field of information security. – M.: Gelios ARV, 2003.- 192 p.

Resources of the information and telecommunications network "Internet":

- 1) Electronic library system (ELS) of RUDN and third-party ELS, to which the university students have access on the basis of concluded agreements:

- EBS RUDN <http://lib.rudn.ru/MegaPro/Web>
- Electronic library system "University Library Online" <http://www.biblioclub.ru>
- EBS "Yurait" <http://www.biblio-online.ru>
- Electronic Library System "Student Consultant" www.studentlibrary.ru
- EBS "Lan" <http://e.lanbook.com/>
- EBS "Troitsky Bridge"
 - www.cbr.ru
 - <http://www.bsi.bund.de/gshb/english/menue.htm> (<http://www.bsi.bund.de/english/gshb/index.htm>)
 - <http://www.cacr.math.uwaterloo.ca/hac/>, <http://www.schneier.com/solitaire.html>,
 - <http://www.nist.gov/>
 - http://cbr.ru/credit/Gubzi_docs/
 - https://www.bsi-fuer-buerger.de/cln_174/EN/Topics/ITGrundschatz/ITGrundschatzCatalogues/itgrundschatzcatalogues_node.html
 - www.kremlin.ru, www.fsb.ru, www.fstec.ru.
 - <http://csrc.nist.gov/groups/SMA/prisma/index.html>

2) Databases and search engines:

- electronic fund of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- SCOPUS abstract database <http://www.elsevierscience.ru/products/scopus/>

Software:

1. Specialized software for conducting practical training and generating reporting documentation for students:

- the PRIZMA package, developed by the American standards institute NIST.
- Python programming language and development environment (freely distributed under the Python Software Foundation License);
- Borland Developer Studio 2006 (License Certificate Number: 33080, 33081, 33082)
- MATLAB

Educational-methodological materials for completing the internship, filling out the diary and preparing the internship report:*

- 1) Rules for safe working conditions and fire safety during Technological practice (initial instruction).
- 2) General structure and operating principle of technological production equipment used by students during their internship; process maps and regulations, etc. (if necessary).
- 3) Methodological instructions for students to fill out a diary and prepare a practice report.

* - all educational and methodological materials for completing the internship are posted in accordance with the current procedure on the internship page in TUIS

9. EVALUATION MATERIALS AND SCORE-RATING SYSTEM FOR ASSESSING THE LEVEL OF COMPETENCE DEVELOPMENT BASED ON THE RESULTS OF PRACTICE

Assessment materials and a scoring and rating system* for assessing the level of development of competencies (part of competencies) based on the results of passing Technological practices are presented in the Appendix to this Practice Program (module).

* - OM and BRS are formed on the basis of the requirements of the relevant local regulatory act of RUDN (regulations/procedures).

DEVELOPERS

Associate Professor of the
Department of Mechanics and
Control Processes

Saltykova O.A.

Position, Department

Signature

Surname I.O.

Associate Professor of the
Department of Mechanics and
Control Processes

Varfolomeev A.A.

Position, Department

Signature

Surname I.O.

HEAD OF THE DEPARTMENT:

Head of the Department of
Mechanics and Control Processes

Razumny Yu.N.

Name of the Department

Signature

Surname I.O.

HEAD OF THE EP HE:

Professor of the Department of
Mechanics and Control Processes

Razumny Yu.N.

Position, Department

Signature

Surname I.O.