BSUIR
BELARUSIAN STATE UNIVERSITY
OF INFORMATICS AND RADIOELECTRONICS
Engineering-Psychological Maintenance of Information Technologies

The notes about the goals and learning outcomes

1. The aim(s) of this programme is to give / ensure that students are prepared to solve the following professional tasks:
− to conduct systems analysis and define engineering and psychological requirements to the information and technical systems;
− to make engineering and ergonomic evaluation and design of software and hardware;

2. Learning outcomes should be listed according to Dublin Descriptors and should be written using infinitive: at first **K − knowledge,** then **P − professional skills, R − research skills, S − social skills.** Now they are mixed. Use the order that is shown below:

After completing this study programme the students will be able to:
1. Apply basic scientific and theoretical knowledge to solve practical problem **K (1)**
2. Develop data structures for use in information systems, operational analysis systems and intellectual systems **P (2)**
3. Perform modelling, design of software tools and documentation to support activities in various subject areas **P (3)**
4. Perform comprehensive testing of the developed software products and applied software **P (4)**
5. Design interfaces and provide ergonomic evaluation of information systems **P (5)**
6. Analyse perspectives and directions of development of information systems and technologies **P (6)**
7. Work independently and in a team **S (7)**
8. Generate new ideas focusing on creativity, critical thinking, communication and collaboration. **S (8)**

3. Fill the **Table 1. Updated learning outcomes and Engineering-Psychological Maintenance of Information Technologies study program.** It let us to see how the subjects and study programme learning outcomes correlate between. Include all of the subjects in this table: both are updated during the project and taught at the BSUIR.

Table 1. Updated learning outcomes and Engineering-Psychological Maintenance of Information Technologies study programme

Subjects	Study program learning outcomes							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Philosophy	+							+
Economy	+					+		
Political science	+					+		
History	+					+		
Professional English				+			+	
Discrete Mathematics	+					+		
Theory of Probability and Mathematical Statistics	+					+		
Object-oriented programming			+			+		
Databases		+				+		
OS			+					+
Computer networks						+	+	
Web technologies			+				+	
Testing programs and applications				+			+	

Discipline	1	2	3	4	5	6	7	8
Programming Technologies			+				+	
Interfaces of information systems			+		+		+	
Law in the field of information technology	+							+
Verification and certification of software / Metrology, standardization and certification (in radio electronics, in infocommunications)				+	+	+		
Intellectual property in IT						+		+
Basics of Computer graphics/ Engineering computer graphics						+	+	
Basics of Software Engineering / Basics of algorithmization and programming			+				+	
Human health and safety	+							+
Cryptographic technologies			+			+		
Engineering psychophysiology	+			+	+			
Psychology, pedagogics of professional activity						+	+	
Ergatic systems					+	+		+
Psychology of information perception				+	+			+
Modern programming languages			+				+	
Engineering and psychological design			+		+	+		
Basics of information and analytical activities						+		+
Circuit design	+				+			+
Big data technology		+						+
Software design for mobile devices			+		+		+	
Technologies Of Designing 3-D Objects	+							+
Ergonomics of Information Systems			+		+	+		
Multimedia creation and processing technologies					+	+	+	
IT project management			+					+
Belarusian (Speech culture)	+						+	

4. Fill the **Table 2.** An example is given below.

Table 2. Correlation between IT Profile and the educational standard approved by the Ministry of Education of the Republic of Belarus

IT Profile	Belarusian standard PC = professional competence AC = academic competence SPC = social and personal competence
1. Apply basic scientific and theoretical knowledge to solve practical problems.	−AC-1 Be able to apply basic scientific and theoretical knowledge to solve theoretical and practical tasks. − AC-3. Possess research skills. − AC-9. Study and improve one's skills during the lifetime. − AC-10. Use main laws of natural science disciplines in one's professional life.

	− AC-14. On a scientific basis, organize one's work and independently assess activity results.
2. Develop data structures for use in information systems, operational analysis systems and intellectual systems	− AC-11. Know basic methods and means of obtaining, storing and processing information with the help of computer technology. PC-7. Design databases.
3. Perform modelling, design of software tools and documentation to support activities in various subject areas	− PC-6. Develop, install and maintain system and application software
4. Perform comprehensive testing of the developed software products and applied software	− PC-4 Carry out tests of prototypes of "man-machine" system elements; PC-5. Perform engineering and psychological assessment and design of software and hardware
5. Design interfaces and provide ergonomic evaluation of information systems	− PC-1. Distribute functions between a person and technical devices in the design of human-machine systems; − PC-2. Determine the number and type of necessary means of information interaction of a person and technical devices; − PC-3. Develop engineering and psychological requirements for input-output information; − PC-9. Carry out engineering and psychological assessment of "man-machine" systems; − PC-11. Develop and examine technical user documentation.
6. Analyse perspectives and directions of development of information systems and technologies	−AC-2. Be able to conduct system and comparative analysis. − AC-6. Have an interdisciplinary approach to problem solving. − PC-8. Carry out a system analysis of information and technical systems
7. Work independently and in a team	− AC-8. Have the skills of oral and written communication. − SPC-2. Be capable of social interaction. − SPC -3. Have the ability for interpersonal communication. − AC-4. To be able to work independently. − SPC -6. To be able to work in a team

8. Generate new ideas focusing on creativity, critical thinking, communication and collaboration.	– AC-5. Be able to generate new ideas (have creativity).

The notes about Study plan

12 new innovative courses (57 credits, 24%)

No	Courses EN	BSUIR need to integrate during the project	Study plan	ECTS	Notes
1	Law in the IT-sphere / Право в IT сфере	3	Law in the field of information technology/ Право в области информационных технологий	3	
2	Intellectual Property and Protection of Information / Интеллектуальная собственность и защита информации	3	Intellectual property in IT/ Интеллектуальная собственность в информационных технологиях	3	
3	Psychology of Information Perception / Психология восприятия информации	3	Psychology of information perception/ Психология восприятия информации	3	
4	Management of IT Projects / Управление ИТ проектами	3	IT project management / Управление IT-проектами	3	
5	Multimedia Creation and Processing Technologies / технологии создания и обработки мультимедиа	6	Multimedia creation and processing technologies/ Технологии создания и обработки мультимедиа	6	
6	Computer Networks / Компьютерные сети	3	Computer networks/ Компьютерные сети	3	
7	Web Technologies / веб - технологии	3	Web technologies/ Веб-технологии	3	
8	English for Specific Purposes / Профессиональный английский	8	Professional English / Профессиональный английский	8	
9	Software development for mobile devices / разработка программного обеспечения для мобильных устройств	5	Software design for mobile devices/ Разработка программного обеспечения для мобильных устройств	5	
10	Programming Technologies / технологии программирования	7	Programming Technologies/ Технологии программирования	7	additional
11	Technology of Design 3D Objects / Технологии проектирования 3D объектов	4	Tecnology of Design 3D Objects/ Технологии проектирования 3D объектов	4	

12	Object-oriented programming / объектно-ориентированное программирование	**9**	Object-oriented programming/ Объектно-ориентированное программирование	9	
	ECTS	**57**		**57**	