Rector
Belarusian State University
_____ Andrei D. Koval
11.07.2019

Registration number 6-01-5312-19/ур.

BELARUSIAN STATE UNIVERSITY
CURRICULUM

Контрольный экземпляр 35.2.2ур.

Speciality: 1-31 80 02 Geography

Degree: Master
Period of study: 1,8 years
Full-time form of education

Profiling: Remote Sensing and Spatial Analysis in Geoinformation Systems (GIS)

I. Schedule of the educational process

II. Summary (in weeks)

YEARS	Sep				Oct				Nov				Dec				Jan				Feb			Mar				Apr				May				Jun				Jul				Aug				Academic Studies	Exams	Internship	Research	Master's Thesis	Vacation	Total
	1	8	15	22	29/09	6	13	20	27/10	3	10	17	24	1	8	15	22	29/12	5	12	19	26/01	2	9	16	23/02	2	9	16	23	30/03	6	13	20	27/04	4	11	18	25	1	8	15	22	29/06	6	13	20	27/07	3	10	17	24							
	7	14	21	28	05/10	12	19	26	02/11	9	16	23	30	7	14	21	28	04/01	11	18	25	01/02	8	15	22	01/03	8	15	22	29	05/04	12	19	26	03/05	10	17	24	31	7	14	21	28	05/07	12	19	26	02/08	9	16	23	31							
I									18								:	:	:	=	=								16								:	:	X	X	X	X	=	=	=	=	=	=	=	34	5	4			9	52
II									18								:	:	:	=	=	X	X	X	/	/	/	/	/	/	/	//																			18	3	3	8	1	2	35
																																																			52	8	7	8	1	11	87

Обозначения: [ ] – Academic Studies; [X] – Internship; [//] – Master`s Thesis; [:] – Exams; [/] – Research; [=] – Vacation

III. Curriculum

No п/п	The name of the module, academic discipline, course project (course work)	Exams	End-of-term test	Academic hours						Semesters													Competence Code
						As follows:				I year						II year							
				Total	Total in class	Lectures	Laboratory work	Workshops	Seminar classes	1 semester, 18 weeks			2 semester, 16 weeks			3 semester, 18 weeks			4 semester				
										Total	Total in class	Credits	Total	Total in class	Credits	Total	Total in class	Credits	Total	Total in class	Credits		
1.	**State Component**			**926**	**162**	**56**	**90**	**8**	**8**	**304**	**80**	**9**	**316**	**82**	**9**	**306**		**9**					
1.1	**Module "Research Methodology"**																						UC-1, DPC-1
1.1.1	Modern Problems of Geography and Geoinformatics	1		98	40	24		8	8	98	40	3											
1.1.2	Research Seminar		1,2,3	522						108		3	108		3	306		9					
1.2	**Module "Geospatial Analysis"**																						DPC-2
1.2.1	GIS Software	1		98	40	10	30			98	40	3											
1.2.2	GIS for Urban Planning		2	208	82	22	60						208	82	6								
2.	**Higher Education Institution Component**			**2278**	**850**	**316**	**544**	**0**	**0**	**690**	**238**	**21**	**508**	**182**	**15**	**1080**	**430**	**34**					
2.1	**Module "Remote Sensing"**																						SC-1
2.1.1	Remote Sensing for Earth Observation		1	198	66	36	30			198	66	6											
2.1.2	Satellite Data Processing and Image Analysis	1		198	66	20	46			198	66	6											
2.1.3	Remote Sensing of Vegetation / Remote Sensing of Urban Areas		2	112	50	14	36						112	50	3								
2.2	**Module "Geographical information systems"**																						SC-2
2.2.1	Principles of Geographical Information Science		1	198	66	20	46			198	66	6											
2.2.2	Spatial Modelling and Analysis in GIS	2		198	66	20	46						198	66	6								
2.2.3	Python Programming in GIS	2		198	66	20	46						198	66	6								
2.3	**Module "Geodata Proccessing"**																						SC-3
2.3.1	Spatial Database Management	2		96	40	16	34			96	40	3											
2.3.2	Data Analysis and Statistics / Mathematical Methods in Geodata Processing	3		198	66	20	46									198	66	6					
2.4	**Module "GIS for Natural Resource Management"**																						SC-4
2.4.1	GIS for Mineral Resource Management		3	126	52	20	32									126	52	4					
2.4.2	GIS for Water Resource Management		3	126	52	20	32									126	52	4					
2.4.3	GIS for Soil Resource Management		3	126	52	20	32									126	52	4					
2.4.4	GIS for Land Resource Management	3		126	52	20	32									126	52	4					
2.4.5	GIS for Environmental Management / GIS for Landscape Planning and Environmental Protection	3		126	52	20	32									126	52	4					
2.5	**Module "Spatial Analysis in Human Geography and Related Fields"**																						
2.5.1	Spatial Analysis in Toponymics		3	126	52	30	22									126	52	4					SC-5
2.5.2	Logistics and Spatial Analysis of Transport Systems	3		126	52	20	32									126	52	4					SC-6
3.	**Optional Subjects**																						
3.1	Creative Teaching Techniques in Higher School / Pedagogics and Psychology of Higher Education		/3	/108	/56	/30		/26								/108	/54	/3					UC-2
4.	**Series of Disciplines for Candidate Exams and Additional Training[1]**			**/568**	**/316**					**/358**	**/202**	**/3**	**/210**	**/114**	**/12**								
4.1	Philosophy and Methodology of Science	/2		/240	/104	/60			/44	/140	/60		/100	/44	/6								UC-3
4.2	Foreign Language	/2	/1	/220	/140			/140		/110	/70	/3	/110	/70	/3								UC-4
4.3	Information Technologies: Basics		/1	/108	/72	/36	/36			/108	/72	/3											UC-5
Number of Hours				**3204**	**1012**	**372**	**634**	**8**	**8**	**994**	**318**	**30**	**824**	**264**	**24**	**1386**	**430**	**43**					
Number of Hours per Week										18			17			24							
Number of Exams				10						3			3			4							
Number of End-of-term tests				11						3			3			5							

IV. Internship				V. Research			VI. Final Certification
Internship Title	Semester	Weeks	Credits	Semester	Weeks	Credits	Master's Thesis
Data Collection	2	4	6	4	8	12	
Data Analysis	4	3	5				

VII. Competence Matrix

Competence Code	Competence Name	Module Code, Discipline Code
UC-1	Be able to apply scientific cognition (analysis, comparison, systematization, abstraction, modelling, data authenticity checking, decision-making etc.) in independent research activity, to generate and realize innovative ideas	1.1
UC-2	Be able to perform pedagogical activity in education establishments, master and implement efficient education and information and communication technologies and pedagogical innovations	3.1
UC-3	Master the methodology of scientific cognition, to be able to analyse and evaluate the content and level of philosophic and methodological issue while solving the tasks related to scientific research and innovative activity	4.1
UC-4	Use a foreign language for communication in interdisciplinary and scientific environment, in various formats of international cooperation, scientific research and innovative activity	4.2
UC-5	Have skills of using the contemporary information technologies for solving scientific research and innovative tasks	4.3
DPC-1	Be able to apply conceptual and methodological framework in the field of geography for organisation of research activities, determining the relevance of research problem and developing research methods. Be able to use professional conceptual apparatus in practice. Master information retrieval and analysis technology on topics related to professional activities	1.1
DPC-2	Be able to apply geographic information tools while conducting spatial data analysis, solving research problems of territorial management and	1.2
SC-1	Be able to use techniques for remote sensing data preprocessing and the implementation of visual and automated interpretation of general geographical and thematic information for various types of economic activity	2.1
SC-2	Be able to use geographic information systems for spatial modeling and analysis, to create spatial data geoprocessing tools in the Python programming language to solve research and innovative tasks	2.2
SC-3	Be able to perform mathematical processing and statistical analysis of geodata, to implement the management of spatial databases of scientific and innovative projects	2.3
SC-4	Have skills of using geographic information systems to solve research and innovative tasks in the field of natural resource management (mineral, water, soil, land) and nature management process	2.4
SC-5	Be able to use methods of toponymic databases building, performing spatial analysis of toponymic systems in order to identify the processes of territories development and household management peculiarities in the past	2.5.1
SC-6	Be able to analyze logistics strategies and processes, transport logistics of enterprises, optimize logistic processes, develop a strategy for transport logistics services development, taking into account market demand and business entities operation features	2.5.2

Developed on the basis of the model curriculum of the specialty 1-31 80-02 Geography, approved on March 21, 2019. Registration №G 31-2-002/pr-tip.

[1]Series of Disciplines for Candidate Exams and Additional Training «Philosophy and Methodology of Science», «Foreign Language», «Information Technologies: Basics» are studied according to the choice of a student.

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