

Master's Educational Program

Name of the program
მშენებლობა
Construction
Faculty
სამშენებლო

Civil Engineering

Program Supervisor

Professor Tamaz Khmelidze

Qualification to award

Direction, Field / Specialty and / or Subordination / Specialization in Georgian მაგისტრი

(Master of Direction, Field / Specialty and / or Subordinate / Specialization in English)

In case of implementation of no less than 120 credits of the educational program

ინჟინერიის მაგისტრი მშენებლობაში არჩეული სამაგისტრო თემატიკის შესაბამისი სპეციალიზაციით მიენიჭება საგანმანათლებლო პროგრამის არანაკლებ 120 კრედიტის შესრულების შემთხვევაში

ა) ინჟინერიის მაგისტრი მშენებლობაში სამოქალაქო და სამრეწველო მშენებლობის
 სპეციალიზაციით;

Engineering master in construction with major in Civil and Industrial construction;

ბ) ინჟინერიის მაგისტრი მშენებლობაში გრუნტების მექანიკა და ფუძე-საძირკვლების
 სპეციალიზაციით;

Engineering master in construction with major in soil mechanics and base-foundations;

- გ) ინჟინერიის მაგისტრი მშენებლობაში **მშენებლობის ტექნოლოგიის** სპეციალიზაციით; Engineering master in construction with major in construction technology;
- დ) ინჟინერიის მაგისტრი მშენებლობაში კომპიუტერული პროექტირება მშენებლობაში
 სპეციალიზაციით;

Engineering master in construction with major in Computer projecting in Construction;

ე) ინჟინერიის მაგისტრი მშენებლობაში **წყალმომარაგება და წყალარინების** სპეციალიზაციით;

Engineering master in construction with major in water - supply and sewerage;

3) ინჟინერიის მაგისტრი მშენებლობაში პიდროელექტროსადგურების პიდროტექნიკური მშენებლობის სპეციალიზაციით;

Engineering master in construction with major in hydro electrical stations hydro power

engineering;

ზ) ინჟინერიის მაგისტრი მშენებლობაში სამდინარო ჰიდროტექნიკური ნაგებობების მშენებლობის სპეციალიზაციით;

Engineering master in construction with major in river hydro technical structures construction;

თ) ინჟინერიის მაგისტრი მშენებლობაში **საზღვაო ნაგებობების მშენებლობის** სპეციალიზაციით;

Engineering master in construction with major in marine facilities construction;

ი) ინჟინერიის მაგისტრი მშენებლობაში **ხიდებისა და გვირაბების მშენებლობის** სპეციალიზაციით;

Engineering master in construction with major in bridges and tunnels construction;

- კ) ინჟინერიის მაგისტრი მშენებლობაში რკინიგზის მშენებლობის სპეციალიზაციით;
 Engineering master in construction with major in railway construction;
- ლ) ინჟინერიის მაგისტრი მშენებლობაში **ნაგებობათა გამოცდა და ტექნიკური ექსპერტიზის** სპეციალიზაციით;

Engineering master in construction with major in testing structures and technical expertise;

- მ) ინჟინერიის მაგისტრი მშენებლობაში **საშენი მასალების** სპეციალიზაციით; Engineering master in construction with major in building materials;
- ნ) ინჟინერიის მაგისტრი მშენებლობაში **თბოაირმომარაგება და ვენტილაციის** სპეციალიზაციით;

Engineering master in construction with major in thermal gas supply and ventilation;

ო) ინჟინერიის მაგისტრი მშენებლობაში **საავტომობილო გზებისა და აეროდრომების** მშენებლობის სპეციალიზაციით;

Engineering master in construction with major in motorways and airport construction.

 ინჟინერიის მაგისტრი მშენებლობაში გაზმომარაგების სისტემების მშენებლობისა და ექსპლუატაციის სპეციალიზაციით;

Engineer Master in Construction of Construction and maintenance of gas supply systems specialization;

ჟ) ინჟინერიის მაგისტრი მშენებლობაში **სამშენებლო მექანიკისა და სეისმომედეგი** მშენებლობის სპეციალიზაციით

Engineer Master in Construction of Structural Mechanics and Seismoproof construction specialization;

მიენიჭება საგანმანათლებლო პროგრამის არანაკლებ 120 კრედიტის შესრულების შემთხვევაში

The language of teaching

Georgian

Precondition for admission to the program

Masters have the right to have at least a bachelor or a person with a degree equivalent to an academic degree, who will be based on the results of the MA Exams (General master exam and exams examined by GTU). The tests and will be placed on the web page of teaching department of GTU http://www.gtu.ge/study/index.php All least one month before the exams start. Enrollment without passing the Master's Exams can be done in accordance with the procedure established by the Ministry of Education and Science of Georgia.

Description of the program

The program is compiled with ECTS system, 1 credit equals 25 hours, which means both contact and

independent working hours. The distribution of credits are presented in the curriculum. Master's educational program includes 120 credits (ECTS). One academic year – 60 credits, in semester 30 credits, The students annual work load may exceed 60 credits, but not more 75 (ECTS) credits or be less 60 credits.

Training component-75 credits and searching component 45 credits. Masters educational program lasts 2 years (4 semesters). The semester includes 20 weeks from here training process continues is 15 weeks.

The graduate is entitled to complete the final examination, which has completely fulfilled all the conditions with the educational program and minimum competence margin has been overcome in interim estimates. At the same time the minimum amount of work defined by the program was passed .The score of the assessment on the interim assessment and the final examination are 41-50 (collecting FX-failed couldn't pass) of the assessment, they have the right during the sessions period, the additional exam will go once again The interval between the final and the addition test must be at least 5 days.

The score received by the Master of the additional Examinations does not add to the score received in the final exam.

The assessment received in addition to the exam is the final assessment and reflected in the final assessment of the educational program component. The level of achievement of student learning results in each component of the program consists of intermediate assessments, which includes current activity, mid-test exam and final exam. Each component of the evaluation has minimum competence limit, which defined by academic(staffs) and written in syllabus.

Educational program includes following special Master Degree in Specialization:

Civil and Industrial construction Ground mechanics and base foundations Building technology Computer designing in construction Water Supply and Wastewater Hydropower construction of hydro power plants Construction of river – hydroelectric buildings Construction of bridges Railway construction Testing and technical expertise Building materials Thermal and ventilation Construction of motorways and aerodromes Construction and exploitation of gas supply systems Construction mechanics and seismic construction.

Program research component does not exceed 45 credits and consists of the following components:

Master Research Project / Prospectus - 5 credits, II semester

Theoretical / Experimental Research / Colloquium - 10 credits, III semester

Completion and presentation of master thesis - 30 credits, IV semester

Master Research Project / Prospectus should look at the subject matter of the study, theoretical, practical value of the selected topic. The author should know what types of resources (literature, statistics) are based on and where to find this resource. Prospectus should include the results of processing the relevant literature and the necessary bibliography, as well as the history of the research. It should be briefly presented what is currently being done in this direction and what is currently being done (who works and what direction). The author should establish the main issues of the research, present a work plan.

The capacity of the Master Research Project - Prospectus should be approximately 8-10 pages without annexes.

Theoretical / Experimental Research / Colloquium

The main objective of the theoretical / experimental study is to develop independent work skills, to create a clear presentation of the theme of solving the main professional tasks, to acquire the modern methods of research, to establish and solve the issues raised during the work. In the scope of the study he is tasked to prepare one colloquium.

Colloquium providing presentation of the material related to the master topic / its parts. The main goal of the colloquium is to systemize the knowledge of the master's degree, presenting the results of the work, and the ability to communicate with the professional community. In the colloquium, the master must demonstrate the amount of the subject matter and the specific issue examined, to present the results.

The amount of the work to be published on the colloquium should be about 12-15 pages without annexes.

Completion and presentation of master thesis (qualification work)

The qualification work is a major part of the research component. The completed qualification work should be the result of independent research work of the Master. The qualification work should reflect the results obtained from the theoretical / experimental research. The amount of a master's thesis should be typically no less than 70 and not more than 100 pages.

For more information, see the following documents:

Regulation of Georgian Technical University on Master's Degree-

http://gtu.ge/Study-Dep/Files/Pdf/mag_debuleba_2017_SD.pdf

Undergraduate Personal plan

http://gtu.ge/Study-Dep/Files/Pdf/mag_deb_3%20danar_%20%2080817_SD.pdf

Rule of Evaluation of the Masters Educational Program Research Component

http://gtu.ge/Study-Dep/Files/Pdf/mag_deb_dan4_80217_SD.pdf

Instructions for submitting the paper for the Master's degree

http://gtu.ge/Study-Dep/Files/Pdf/magist_debuleba_dan5_2017_SD.pdf

The purpose of the program

- Create a learning environment that will ensure the development of the personal characteristics of the masters and formation of the necessary competences for professional activities;
- To prepare a master of construction, after completing an educational program, in accordance with the labor market requirements, with the knowledge and skills required to independently start implementation in construction space and to correctly carried out the construction process;
- To learn the complex engineering problems in the construction industry using new methods and approaches;
- To learn independently working on design normative documentation and delivering quality-oriented construction site for operation;
- Prepare an active specialist for a career in construction field that will be motivated to achieve more in professional terms.

• Master's program will facilitate for development accordingly of the modern requirements specialist from student's as well as to develop awareness, independently implementation of the research, sound conclusions and rapidly upgrade skills.

Learning Outcomes and Competences (General and Sectoral)

- **Knowledge and Understanding** the Graduates will Have:
- Deep and systemic knowledge of the field of construction that enables new, original ideas to be developed with appropriate specialization.
- Deep and systematic knowledge of concepts of building design, technological processes of construction;
- Knowledge required for the engineering preparation of construction and execution of high quality of construction-installation works;
- Ability to search for ways to solve problems design of building;
- Developing original ideas for construction with innovative structural systems, including modern scientific achievements;
- Systemic knowledge of technical and economic justification of project design solutions;
- Ability to properly determine and evaluate risk factors during design, construction and exploitation of buildings.
- Ability to independently develop and implement the measures for survey of existing building structures and their reinforcement measures if needed;
- Deep and systemic knowledge of construction norms and rules, complex issues of technological processes, terms, basic definitions and methods in construction process

Understands:

- The need for technically justified organizational and economic solutions to solve existing problems;

- The ways of solving separate problems of buildings and systems, taking into account the risk factors.

Ability to use Acquired Knowledge and Skills in Practice – the Graduates will Have and be Able to:

- Action in new, unforeseen and multidisciplinary environment; search for new, original ways of solving complex problems in field, including specialized research using the latest methods;
- Planning and analysis of independent experiments, data mathematical and statistical processing using the latest methods and approaches;
- Ability to independently performing of works, in accordance with the construction norms and rules, taking into consideration requirements for construction;
- Independently implement construction, field and technical supervision at all stages from beginning up to end;
- Ability to independently manage construction using modern engineering and technologies;
- Independently carrying out of all stages of construction and project activities from the idea up to finish. **Conclusion-Making Skills** the Graduates will Have:
- Ability to making reasonable conclusions based on the full information of the application of normative legal documents in professional activities;
- Ability to summarization of the risk factors based on proper acknowledgement, evaluation and critical analysis during construction and exploitation;
- Has the ability to search and analyze the latest research information from scientific-technical literature and Internet.
- Ability to innovative synthesis of information on the basis of analysis of the originally performed job, based on the construction standards;
- Ability to interpret modern technologies and materials used for construction, execution of practical work and received data for construction

Communication Skills – the Graduates will Have:

- Taking into consideration the communication technologies, independently preparing a detailed report, and the ability to deliver information in Georgian and English public to the civil engineer community.
- Ability to participate in the considerations and discussions with the field specialists on sound conclusions and research methods;
- Ability to independently compile a business document using civil engineering terminology;
- Ability to communicate with the academic or professional community in the relevant format;

Learning Skills – the Graduates will Have:

- independently conducting the learning process, high level of strategic planning and multilateral assessment;
- Ability to see the connection between theoretical knowledge and practical activity, determine the needs of learning on a higher level of independence at the next level;
- Determine and implement on the basis of self-esteem, priorities of educational activities and its perfection. **Values:**
- Graduates have the ability to act in accordance with the basic laws of ethics, assign the professional and ethical responsibility of the civil engineer to the public safety and health as well as on aesthetic values;
- Encourages ecological systems to respect and environmental commitments;
- Ability to protect professional values (honesty, civic consciousness and activity, accuracy, punctuality, objectivity, organization and etc.);
- Participates in establishing such new values that will ensure public security, health and well-being
- Ability to determine the need for learning throughout all life.

Methods of achieving learning outcomes (teaching and learning)

 \bigtriangleup Lecture \boxtimes Seminar (work in group) \boxtimes Practical \square Laboratory \boxtimes practice \boxtimes Course paper / project \boxtimes Master's paper \boxtimes Consultation \boxtimes Independent work

Based on the specific course of study in the learning process, the relevant below listed activities of the teaching-learning methods are used, which are reflected in the relevant training courses (syllabus):

- 1. **Discussion/debates.** This is the most widely spread method of interactive teaching. A discussion process greatly increases the quality of students' involvement and their activity. A discussion may turn into an argument and this process is not merely confined to the questions posed by the teacher. It develops students' skills of reasoning and substantiating their own ideas.
- 2. **Cooperative teaching** is a teaching strategy in the process of which each member of a group not only has to learn the subject himself, but also to help his fellow-student to learn it better. Each member of the

group works at the problem until all of them master the issue.

- 3. **Collaborative work**; using this method implies dividing students into separate groups and giving each group its own task. The group members work at their issues individually and at the same time share their opinions with the rest of the group. According to the problem raised, it is possible to shift the functions among the group members in this process. This strategy ensures the students' maximum involvement in the learning process.
- 4. **Problem-based learning (PBL)** is a method which uses a concrete problem as the initial stage both for acquiring new knowledge and integration process.
- 5. **Eurastic method** is based on the gradual solution of the tast set. This process is carried out independently of the learning facts and by seeing the connections between them.
- 6. 6**Case study** the teacher discusses concrete cases together with the students and they study the issue thoroughly. E.g., in the sphere of engineering safety it can be a discussion of a concrete accident or catastrophe, or in political science it can be a study of a concrete
- 7. Brain storming this activity implies to form and promote radically different opinion, idea on concrete issue/problem. This activity contributes to the development of a creative approach to the problem. Its application is effective in case of a large number of students and consists of several main stages: Problem / issue determination in a creative perspective; In a certain period of time, without criticism, note the ideas expressed by the listeners (mainly on the board); Determination of assessment criteria to determine the establish the conformity of the idea with the aim of the research; Assessment of selected ideas with predetermined criteria; By process of elimination, distinguish those ideas that are most relevant to the issue. Demonstration of the highest evaluation idea as the best way to solve the set problem
- 8. Role and situational games games that are fulfilled according to predefined scenario allow students to look at the issue differently. It helps them to develop an alternative viewpoint. Like discussions, these games also formulate the student's ability to express and protect his/her position independently
- 9. **Demonstration method** implies presenting information with the help of visual aids. It is quite effective in reaching the required result. It is frequently advisable to present the material simultaneously through audio and visual means. The material can be presented both by a teacher and a student. This method helps us to make different steps of perceiving the teaching material more obvious, specify what steps the students are supposed to take independently; at the same time this strategy visually shows the essence of an issue/problem. Demonstration can be very simple.
- 10. **Induction is** such a form of transmitting any knowledge when the process of thinking in the course of the study is directed towards generalization, in other words when delivering the material the process is going from concrete to general.
- 11. **Demonstration method** implies presenting information with the help of visual aids. It is quite effective in reaching the required result. It is frequently advisable to present the material simultaneously through audio and visual means. The material can be presented both by a teacher and a student. This method helps us to make different steps of perceiving the teaching material more obvious, specify what steps the students are supposed to take independently; at the same time this strategy visually shows the essence of an issue/problem. Demonstration can be very simple.
- 12. **Analytical method** helps us to divide the whole teaching material into constituent parts. In this way the detailed interpretation of separate issues within the given complex problem is simplified.
- 13. **Synthetic method** implies forming one issue from several separate ones. This method helps students to develop the ability of seeing the problem as a whole.
- 14. Verbal or oral method comprises a lecture, narration, conversation, etc. During the process the teacher conveys, explains the material verbally, and students perceive and learn it by comprehending and memorizing.
- 15. Written method implies the following forms of activity: copying, taking notes, composing theses, writing essays.
- 16. **Practical activity** unite all the teaching forms that stimulate developing practical skills in students. In this case a student independently performs different kinds of activity on the basis of the knowledge acquired
- 17. **Explanatory method** is based on discussing a given issue. In the process of explaining the material the teacher brings concrete examples the detailed analysis of which is made in the framework of the given

topic.

- 18. Activity-oriented teaching implies teachers' and students' active involvement in the teaching process, when practical interpretation of the theoretical material takes place.
- 19. **Designing and presenting a project.** While designing a project a student applies the knowledge and skills he has acquired for solving a problem. Teaching by means of designing projects increases students' motivation and responsibility. Working on a project involves the stages of planning, research, practical activity and presenting the results according to the chosen issue. The project is considered to be completed if its results are presented clearly, convincingly, and correctly. It can be carried out individually, in pairs or in groups; also, within the framework of one or several subjects (integration of subjects); on completion the project is presented to a large audience.

Student knowledge assessment system

Grading system is based on a 100-point scale.

Positive grades:

- (A) Excellent the rating of 91-100 points;
- **(B)** Very good - the rating of 81-90 points
- (C) Good the rating of 71-80 points
- (D) Satisfactory the rating of 61-70 points
- **(E)** Enough the rating of 51-60 points

Negative grades:

- (FX) Did not pass 41-50 points of rating, which means that the student needs more work to pass and is given the right to take the exam once more with independent work;
- **(F)** Failed 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning.

Opportunity to continue learning

Doctoral Educational Programs

Employment field

Within the frame of mentioned program has acquired knowledge of the graduates will be able to successfully work and career growth in the industrial and commercial enterprises, social organizations, government agencies, consulting firms and agencies, international organizations, construction and energy companies in the relevant ministries of sector, municipal supervision and architecture department, motor road department; utility services in towns; in banks; water supply and wastewater regional, municipal and republican organizations; heat and air supply, ventilation and gas supply design companies, Georgian Railway and other organizations. (Graduates will be employed on the positions envisaged by the respective standards of Master's Qualification).

Possibility to continue the education

PhD educational programs

Human and material resources necessary for the implementation of the program

The program is provided with appropriate human and material resources. For more information see attached documents.

Number of attached syllables: 149

			ECTS Credits				
No		Precondition of	ΙYe	ar	II Ye	ear	
INº	Course Title	admit	Se		emester		
			Ι	II	III	IV	
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5				
2	2.1 Theory and Practice of Specialized Translation (English)2.2 Theory and Practice of Specialized Translation (Franch)2.3 Theory and Practice of Specialized Translation (German)2.4 Theory and Practice of specialized Translation (Russian)	N/E		5			
3	Preparation and implementation of the invest projects in to the building	N/E	5				
4	Composite structures in construction	N/E	5				
5	Building technical Expertise	N/E	5				
6	Theoretical studies of prestressed teroo-concrete structures	Composite structures in construction		5			
7	Mechanics of the Thin-walled Spatial Systems	N/E	5				
8	Strengthening Basic Foundations	N/E	5				
9	Special wood and plastic constructions	N/E		5			
10	The building - building modern methods of calculation	N/E		5			
11	Transforming (space, ground) structures and facilities	N/E		5			
12	Design and operation of buildings and structures in seismically active regions	The building - building moder n methods of calculation			3		
13	Metal structure	N/E			4		
14	Reinforced concrete structures	Theoretical studies of prestressed teroo-concrete structures			4		
15	Reconstruction of building-masked frames of building- structures	The building - building moder n methods of			4		

		calculation				
16	Management, design and security in emergency situations	N/E			5	
		Per semester	30	25	20	
Total:				7	′5	
	Research Component	:				
	Master Research Project / Prospectus	N/E		5		
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
	Total per semester:				30	30
		Total per year:	6	60	6	50
		Total:		1	20	

			ECTS Credits			
No		Precondition of	I Year		II Year	
INº	Course Title	admit		Sem	ester	
			Ι	II	III	IV
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5			
2	2.1 Theory and Practice of Specialized Translation (English)2.2 Theory and Practice of Specialized Translation (Franch)2.3 Theory and Practice of Specialized Translation (German)2.4 Theory and Practice of specialized Translation (Russian)	N/E		5		
3	Preparation and implementation of the invest projects in to the building	N/E	5			
4	Soil Mechanics	N/E	9			
5	Foundation Engineering	Soil Mechanics		9		
6	Computer Programs for Designing Buildings	N/E	6			
7	Strengthening Basic Foundations	Soil Mechanics			10	
8	Reconstruction of building-masked frames of building- structures	N/E		5		
9	City Engineering Structure	Computer Programs for Designing Buildings		6		
10	Depreciation of buildings	Reconstruction of building-			10	

		Total:		12	20	
		Total per year:	6	60	6	60
		Total per semester:	30	30	30	30
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Master Research Project / Prospectus	N/E		5		
	Research Componen	t:				
		Total:		7	'5	
		Per semester	30	25	20	
11	Geotechnical engineering	N/E	5			
		masked frames of building- structures				

				ECTS	Credits		
No		Precondition of	I Year		II Year		
INº	Course Little	admit	Se		mester		
			Ι	II	III	IV	
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5				
2	2.1 Theory and Practice of Specialized Translation (English)2.2 Theory and Practice of Specialized Translation (Franch)2.3 Theory and Practice of Specialized Translation (German)2.4 Theory and Practice of specialized Translation (Russian)	N/E		5			
3	Preparation and implementation of the invest projects in to the building	N/E	5				
4	Software Package of Mathematical Models of Computational Processes	N/E	5				
5	Construction Economics	N/E	5				
6	Building Materiology	N/E	5				
7	Technologies of construction	N/E		6			
8	Construction Special Constructions	N/E		7			
9	Construction legislation and normative documentation on construction	Technologies of construction			5		
10	Building buildings, diagnostics, reconstruction, modernization	Technologies of construction			5		
11	Technology of building special facilities	Technologies of			5		

		construction						
12	Viable technological solutions of building processes and buildings	N/E		7				
13	Monolithic building-building technology	N/E	5					
14	Energysaving technologies in construction	N/E			5			
		Per semester	30	25	20			
Total					5	•		
	Research Component:							
	Master Research Project / Prospectus	N/E		5				
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10			
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30		
		Total per semester:	32	28	30	30		
		Total per year:	6	0	6	0		
	Total:							

	Precondition o		ECTS Credits			
No	Course Title	Precondition of	ΙYe	ar	IΙΥ	ear
11=	Course Title	admit		Sem	ester	
			Ι	II	III	IV
	1.1 Business Communication (English)	N/E				
1	1.2 Business Communication (French)		5			
	1.3 Business Communication (German)					
	2.1 Theory and Practice of Specialized Translation (English)	N/F				
2	2.2 Theory and Practice of Specialized Translation (Franch)	171		_		
	2.3 Theory and Practice of Specialized Translation (German)			5		
	2.4 Theory and Practice of specialized Translation (Russian)					
3	Preparation and implementation of the invest projects in to the building	N/E	5			
4	Numerical Methods of Solving Construction Tasks	N/E	6			
5	Structured Programming with C++ Language	N/E	8			
6	Application of The optimization methods in construction	N/E		9		
7	Construction Special Constructions	N/E			5	
	Application of the finite elements method in construction	Numerical				
		Methods of				
8		Solving			9	
		Construction				
		Tasks				

9	Control of date Bases Visual FoxPro	N/E		6		
10	Computer Programs for Designing Buildings	Control of date Bases Visual FoxPro			6	
11	Software Package of Mathematical Models of Computational Processes	N/E	6			
12	Reconstruction of building-masked frames of building- structures	Construction Special Constructions		5		
		Per semester	30	25	20	
Total:					5	
	Research Component:					
	Master Research Project / Prospectus	N/E		5		
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
	נ	lotal per semester:	30	30	30	30
		Total per year:	6	0	6	0
		Total:		12	20	

				ECTS	Credits	
No	Course Title	Precondition of	I Year		II Year	
14-	Course The	admit		Sem	ester	
			Ι	II	III	IV
	1.1 Business Communication (English)	N/E				
1	1.2 Business Communication (French)		5			
1	1.3 Business Communication (German)		J			
	1.4 Business Communication (Russian)					
	2.1 Theory and Practice of Specialized Translation (English)	N/E				
_	2.2 Theory and Practice of Specialized Translation (Franch)			-		
2	2.3 Theory and Practice of Specialized Translation (German)			5		
	2.4 Theory and Practice of specialized Translation (Russian)					
2	Preparation and implementation of the invest projects in to	N/E	5			
5	the building		J			
4	Theory and Methodology for Computation of Water Supply	N/E			10	
4	and Distribution and Computer Provision				10	
_	Designing water supply and sewerage systems for residential	N/E			10	
5	and industrial facilities				10	
6	Water Supply and Wastewater Pumping Saddles Design	N/E	10			
7	Receiving natural waters and designing the water treatment	Water Supply		6		
/	Receiving natural waters and designing the water treatment	water supply		0		

	plant	and Wastewater Pumping Saddles Design				
8	Design of Wastewater Treatment Structures	Water Supply and Wastewater Pumping Saddles Design		7		
9	Rational use, monitoring and protection of water resources	Water Supply and Wastewater Pumping Saddles Design		7		
10	The reliability of water supply systems, basics of design and management	N/E	10			
		Per semester	30	25	20	
		Total:		7	'5	
	Research Component:	:				
	Master Research Project / Prospectus	N/E		5		
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
		Total por comostor	20	30	30	30
		Total per semester.	30	50	50	
		Total per year:	50	50 10	6	0

			ECTS Cred			redits	
No	Course Title	Precondition of	I Year		II Year		
11	Course Title	admit	Ser		Semester		
			Ι	II	III	IV	
	1.1 Business Communication (English)	N/E					
1	1.2 Business Communication (French)		5				
1	1.3 Business Communication (German)		J				
	1.4 Business Communication (Russian)						
2	2.1 Theory and Practice of Specialized Translation (English)2.2 Theory and Practice of Specialized Translation (Franch)	N/E		5			
	2.3 Theory and Practice of Specialized Translation (German)2.4 Theory and Practice of specialized Translation (Russian)						
3	Preparation and implementation of the invest projects in to the building	N/E	5				
4	Engineering Hydroecology	N/E	6				
5	Flood Risk Management	N/E	6				

	Total:		12	20	
	Total per year:	6	N N	6	0
<u>_</u>	Total per semester:	30	30	30	30
Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium		_		30
Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
Master Research Project / Prospectus	N/E		5		
Research Component:					
	Total:		7	5	
organization of construction of frydroelectric power plants	Per semester	30	0 25	20	
operation	N/F		7		
Production of Hydraulic Construction Using Modern Technologies	Organization of construction of Hydroelectric power plants N/E			10	
Financing methods of investment projects in hydro energy	Economic justification for the construction of Hydroelectric power plants			10	
Economic justification for the construction of Hydroelectric power plants	The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations.		7		
The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations.	N/E	9			
	The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. Economic justification for the construction of Hydroelectric power plants Financing methods of investment projects in hydro energy Production of Hydraulic Construction Using Modern Technologies Projecting of hydroelectric power plants and Modes of operation Organization of construction of Hydroelectric power plants Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. The use of statistical methods and stochastic models in the design and operation of hydroelectric power plants Economic justification for the construction of Hydroelectric power plants The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. Financing methods of investment projects in hydro energy Economic justification for the construction of Hydroelectric power stations. Production of Hydraulic Construction Using Modern Technologies Organization of construction of Hydroelectric power plants Projecting of hydroelectric power plants and Modes of operation N/E Organization of construction of Hydroelectric power plants N/E Master Research Project / Prospectus N/E Theoretical / experimental research / colloquium Master Research Project / Prospectus Accomplishment and Defense of Master's Thesis Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis Theoretical / experimental research / colloquium	The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. N/E 9 Economic justification for the construction of Hydroelectric power plants The use of statistical methods and stochastic models in the design and operation of hydroelectric models in the design and operation of hydroelectric power stations. In the use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. In the use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. Financing methods of investment projects in hydro energy Economic justification for the construction of Hydroelectric power plants Power plants Production of Hydraulic Construction Using Modern Organization of construction of Hydroelectric power plants Organization of construction of Hydroelectric power plants N/E 30 Projecting of hydroelectric power plants N/E Intervention of trade per semester 30 Theoretical / experimental research / colloquium Master Research Project / Prospectus Intervential research / colloquium Master Research Project / Prospectus 1 Accomplishment and Defense of Master's Thesis Theoretical / experimental research / colloquium Theoretical / colloquium 30 Complishment and Defense of Master's Thesis Theoretical / colloquium S 30 Colloquium Theo	The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. N/E 9 Economic justification for the construction of Hydroelectric power plants The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. 7 Financing methods of investment projects in hydro energy Economic justification for the construction of Hydroelectric power plants 7 Production of Hydraulic Construction Using Modern Organization of construction of Hydroelectric power plants 7 Projecting of hydroelectric power plants and Modes of operation of construction of Hydroelectric power plants N/E 6 Projecting of hydroelectric power plants N/E 5 Master Research Project / Prospectus N/E 5 Theoretical / experimental research / colloquium Master Research / colloquium Master Research / colloquium 5 Accomplishment and Defense of Master's Thesis Theoretical / experimental research / colloquium 30 30 Accomplishment and Defense of Master's Thesis Theoretical / experimental research / colloquium 30 30	The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. N/E 9 Economic justification for the construction of Hydroelectric power plants The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations. 7 Image: statistical methods and stochastic models in the design and operation of hydroelectric power stations. 7 Image: statistical methods and stochastic models in the design and operation of hydroelectric power stations. 7 Image: statistical methods and stochastic models in the design and operation of hydroelectric power stations. 7 Image: statistical methods and stochastic models in the design and operation of hydroelectric power stations. 7 Image: statistical methods and stochastic models in the design and operation of hydroelectric power stations. 7 Image: statistical methods and stochastic models in the design and operation of hydroelectric power stations. 7 Image: statistical methods and stochastic models in the design and operation of the construction of Hydroelectric power plants 0 7 Image: statistical methods and stochastic models in the design and operation of construction of Hydroelectric power plants 0 7 Image: statistical methods and stochastic models in the design and operation of construction of Hydroelectric power plants N/E 6 10 Projecting of hydroelectric power plants N/E 10 10 10 10 <td< td=""></td<>

		ECTS Credits				
Nº		Precondition of admit	ΙYe	ar	II Year	
	Course Title			Sem	nester	
			Ι	II	III	IV
	1.1 Business Communication (English)	N/E				
1	1.2 Business Communication (French)		5			
1	1.3 Business Communication (German)		J			
	1.4 Business Communication (Russian)					

Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium Total per semester: Total per year:	30	5 30 0	10 30 6	30 30 30
Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium Total per semester:	30	5	10	30 30
Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium		5	10	30
Master Research Project / Prospectus Theoretical / experimental research / colloquium	N/E Master Research Project / Prospectus		5	10	
Master Research Project / Prospectus	N/E		5		
L			_		
Research Component:					
	Total:		7	'5	<u> </u>
Technologies	Per semester	30	25	20	
Production of Hydraulic Construction Using Modern	N/E		10		
Design and construction of Hydraulic Structures	Hydraulics of Structures			10	
Hydraulics of Structures	N/E	8			
Strength and Seismicity Resistance of Hydraulic of Structures	Production of Hydraulic Construction Using Modern Technologies			10	
Strength and Seismicity Resistance of Hydraulic of Structures	N/E		10		
Flood Risk Management	N/E	6			
Engineering Hydroecology	N/E	6			
Preparation and implementation of the invest projects in to the building	N/E	5			
2.3 Theory and Practice of Specialized Translation (German)2.4 Theory and Practice of specialized Translation (Russian)	N/E		5		
	 2.1 Theory and Practice of Specialized Translation (English) 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) Preparation and implementation of the invest projects in to the building 	2.1 Theory and Practice of Specialized Translation (English) N/E 2.2 Theory and Practice of Specialized Translation (Franch) N/E 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) Preparation and implementation of the invest projects in to the building N/E	2.1 Theory and Practice of Specialized Translation (English) N/E 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) N/E Preparation and implementation of the invest projects in to the building N/E Engineering Hydrogeology N/E	2.1 Theory and Practice of Specialized Translation (English) N/E 5 2.2 Theory and Practice of Specialized Translation (Franch) 5 5 2.3 Theory and Practice of Specialized Translation (German) 5 5 2.4 Theory and Practice of specialized Translation (Russian) N/E 5 Preparation and implementation of the invest projects in to the building N/E 5	2.1 Theory and Practice of Specialized Translation (English) N/E 5 2.2 Theory and Practice of Specialized Translation (Franch) 5 5 2.3 Theory and Practice of Specialized Translation (German) 5 5 2.4 Theory and Practice of specialized Translation (Russian) N/E 5 Preparation and implementation of the invest projects in to the building N/E 5

		ECTS Credits				
No		Precondition of	I Year		II Year	
INº	Course Title	admit	Semester			
			Ι	II	III	IV
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5			
2	2.1 Theory and Practice of Specialized Translation (English)2.2 Theory and Practice of Specialized Translation (Franch)2.3 Theory and Practice of Specialized Translation (German)	N/E		5		

	2.4 Theory and Practice of specialized Translation (Russian)					
3	Preparation and implementation of the invest projects in to the building	N/E	5			
4	Engineering Hydroecology	N/E	6			
5	Natural disasters and engineering measures to ensure safety	N/E	5			
6	Computer programming in marine construction	N/E		10		
7	Seaports and Constructions of the Continental Shelf	N/E		10		
8	Calculation methods of wave movements in coastal areas	N/E	9			
9	Shipping roads and ports	N/E			6	
10	Organization and production of marine hydraulic structures.	Seaports and Constructions of the Continental Shelf			9	
11	Economic foundation of sea port construction.	N/E			5	
		Per semester	30	25	20	
		Per semester Total:	30	25 7	20 5	
	Research Component:	Per semester Total:	30	25 7	20 5	
	Research Component: Master Research Project / Prospectus	Per semester Total: N/E	30	25 7 5	20 5	
	Research Component: Master Research Project / Prospectus Theoretical / experimental research / colloquium	Per semester Total: N/E Master Research Project / Prospectus	30	25 7 5	20 5 10	
	Research Component: Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	Per semester Total: N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium	30	25 7	20 5 10	30
	Research Component: Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	Per semester Total: N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium	30	25 7 5 30	20 5 10 30	30
	Research Component: Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis Image: Coll Coll Coll Coll Coll Coll Coll Col	Per semester Total: N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium	30	25 7 5 30 0	20 5 10 30 6	30 30 0
	Research Component: Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis Image: Colloquium state of the state o	Per semester Total: N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium	30	25 7 5 30 0	20 5 10 30 6 20	30 30 30

				ECTS Credits			
No	Course Title Precondition of admit	ΙYe	ear	II Ye	ear		
14=			Sem	nester			
			Ι	II	III	IV	
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5				
2	 2.1 Theory and Practice of Specialized Translation (English) 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) 	N/E		5			
3	Preparation and implementation of the invest projects in to	N/E	5				

		Total:		12	20	
		Total per year:	6	60	6	0
]	Total per semester:	30	30	30	30
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Master Research Project / Prospectus	N/E		5		
	Research Component:					
		Total:		7	5	1
		Per semester	30	25	20	
12	Modern methods of construction thebig-spanbridges and their survey-testing	Reinforced concrete large span bridges, Large span steel bridges			7	
11	Large span steel bridges	System approach for choosing the location of artificial structures		7		
10	Reinforced concrete large span bridges	N/E	7			
9	Calculation of road artificial structures and seismic resistant bridges	N/E		5		
8	Restoration and reconstruction of transport tunnels	Urban underground structures and subways		8		
7	Mechanics of underground structures and design of transport tunnels in seismic zones	N/E			7	
6	Urban underground structures and subways	N/E	8			
5	System approach for choosing the location of artificial structures	N/E	5			
4	Risk Investment Project Risks and Environmental and Social Impact Assessment	N/E			6	
	the building					

				ECTS	Credits	
No	№ Course Title	Precondition of	I Ye	ar	II Year	
IN₀		admit	Semester			
			Ι	II	III	IV

Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium Total per semester: Total per year:	30	5 30 0	10 30 6	30 30 0
Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium	30	5	10	30 30
Master Research Project / Prospectus Theoretical / experimental research / colloquium Accomplishment and Defense of Master's Thesis	N/E Master Research Project / Prospectus Theoretical / experimental research / colloquium		5	10	30
Master Research Project / Prospectus Theoretical / experimental research / colloquium	N/E Master Research Project / Prospectus		5	10	
Master Research Project / Prospectus	N/E		5		
Research Component:					
	Total:		7	/5	
	for strength and stability	30	25	8	
Railway construction in difficult conditions Track monitoring and assessment of the status of rail faults	Calculation the Railroad Track for strength and stability Calculation the Railroad Track		6		
Modernization and Strengthening of Existing Railways	N/E	6			
Providing of Tran traffic safety in complex condition	N/E			6	
Expressway and Specialized Railways	N/E		8		
Interaction Between the Railway and Rolling Stock	N/E		6		
Impact Assessment Calculation the Railroad Track for strength and stability	N/E	10			
structures Risk Investment Project Risks and Environmental and Social	N/E	4		6	
Preparation and implementation of the invest projects in to the building	N/E	5			
 2.1 Theory and Practice of Specialized Translation (English) 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) 	N/E		5		
1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5			
	 1.1 Business Communication (English) 1.2 Business Communication (French) 1.3 Business Communication (German) 1.4 Business Communication (Russian) 2.1 Theory and Practice of Specialized Translation (English) 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) Preparation and implementation of the invest projects in to the building System approach for choosing the location of artificial structures Risk Investment Project Risks and Environmental and Social Impact Assessment Calculation the Railroad Track for strength and stability Interaction Between the Railway and Rolling Stock Expressway and Specialized Railways Providing of Tran traffic safety in complex condition Modernization and Strengthening of Existing Railways Railway construction in difficult conditions Track monitoring and assessment of the status of rail faults 	1.1 Business Communication (English) N/E 1.2 Business Communication (French) 1.3 Business Communication (German) 1.4 Business Communication (Russian) N/E 2.1 Theory and Practice of Specialized Translation (English) N/E 2.3 Theory and Practice of Specialized Translation (German) N/E 2.4 Theory and Practice of specialized Translation (Russian) N/E Preparation and implementation of the invest projects in to the building N/E System approach for choosing the location of artificial structures N/E Risk Investment Project Risks and Environmental and Social Impact Assessment N/E Calculation the Railroad Track for strength and stability N/E Providing of Tran traffic safety in complex condition N/E Railway construction in difficult conditions Calculation the Railroad Track for strength and stability Modernization and Strengthening of Existing Railways N/E Railway construction in difficult conditions Calculation the Railroad Track for strength and stability Track monitoring and assessment of the status of rail faults Calculation the Railroad Track for strength and stability Track monitoring and assessment of the status of rail faults Calculation the Railroad Track for strength and stability Track monitoring and assessment	1.1 Business Communication (English) N/E 5 1.2 Business Communication (German) N/E 5 1.3 Business Communication (Russian) N/E 5 2.1 Theory and Practice of Specialized Translation (English) N/E 5 2.2 Theory and Practice of Specialized Translation (Franch) N/E 5 2.3 Theory and Practice of Specialized Translation (German) N/E 5 2.4 Theory and Practice of Specialized Translation (Russian) N/E 5 Preparation and implementation of the invest projects in to the building N/E 4 Risk Investment Project Risks and Environmental and Social Impact Assessment N/E 10 Interaction Between the Railway and Rolling Stock N/E 10 Interaction Between the Railways N/E 6 Railway construction in difficult conditions Calculation the Railroad Track for strength and stability 10 Modernization and strengthening of Existing Railways N/E 6 Railway construction in difficult conditions Calculation the Railroad Track for strength and stability 10 Track monitoring and assessment of the status of rail faults Calculation the Railroad Track for strength and stability 10 Track mon	1.1 Business Communication (English) 1.2 Business Communication (French) 1.3 Business Communication (Russian)N/E52.1 Theory and Practice of Specialized Translation (English) 2.1 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian)N/E5Preparation and implementation of the invest projects in to the buildingN/E45System approach for choosing the location of artificial structuresN/E46Calculation the Railroad Track for strength and stabilityN/E1010Interaction Between the Railway and Rolling StockN/E68Providing of Tran traffic safety in complex conditionN/E66Railway construction in difficult conditionsCalculation the Railroad Track for strength and stabilityCalculation the Railroad Track for strength and stability66Railway construction in difficult conditionsCalculation the Railroad Track for strength and stability76Railway construction in difficult conditionsCalculation the Railroad Track for strength and stability26Track monitoring and assessment of the status of rail faults to stabilityCalculation the Railroad Track for strength and stability25Track monitoring and assessment of the status of rail faultsCalculation the Railroad Track for strength and stability3025Track monitoring and assessment of the status of rail faultsCalculation the Railroad Trac	1.1 Business Communication (English) N/E 5 Image: Second s

No	Precondition of	ECTS	S Credits
IN≌	admit	I Year	II Year

	Course Title			Sem	ester	
			Ι	II	III	IV
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5			
2	 2.1 Theory and Practice of Specialized Translation (English) 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) 	N/E		5		
3	Preparation and implementation of the invest projects in to the building	N/E	5			
4	Technical diagnosis	N/E	6			
5	Active and Passive Systems for Protection of Structures	N/E	5			
6	Causes, inspections and restoration of building structures	N/E		7		
7	Non-infringing Control Methods	N/E	9			
8	The Technikal Diagnostics of Construqcion Damige	Technical diagnosis		8		
9	Mechanics of Rupture	Technical diagnosis		5		
10	Building technical exspertize	The Technikal Diagnostics of Construqcion Damige			10	
11	Construction Special Constructions	Mechanics of Rupture			5	
12	Reconstruction of building-masked frames of building- structures	Causes, inspections and restoration of building structures			5	
		Per semester	30	25	20	
		Total:		7	5	
	Research Component:			L.	L.	1
	Master Research Project / Prospectus	N/E		5		
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
]	Total per semester:	30	30	30	30
		Total per year:	6	0	6	0
		Total:		12	20	

				ECTS	Credits	
No		Precondition of	ΙYe	ear	II Y	ear
INº	Course Title	admit		Sem	ester	
		-	Ι	II	III	IV
	1.1 Business Communication (English)	N/E				
1	1.2 Business Communication (French)		5			
	1.3 Business Communication (German)					
	2.1 Theory and Practice of Specialized Translation (English)	N/F				
	2.2 Theory and Practice of Specialized Translation (English)					
2	2.3 Theory and Practice of Specialized Translation (German)			5		
	2.4 Theory and Practice of specialized Translation (Russian)					
3	Preparation and implementation of the invest projects in to	N/E	5			
	the building					
4	Software Package of Mathematical Models of Computational	N/E	4			
5	Construction Economics	N/E	5			
6	Monolithic building-building technology	N/E			7	
7	Concrete sciences	N/E		9		
8	Facilities of building materials manufactures	N/E		6		
9	Construction Special Constructions	N/E	5			
	Moderm methods of building materials physical and	N/E				
10	mechanical properties study			5		
11	Construction Materials research and control methods	Concrete			6	
		sciences			0	
12	Building materials substrances, fillers and items	N/E	6			
	Desingn for enterprise of building materials	Facilities of				
13		building			7	
		materials				
		Der somostor	20	25	20	
		Totalı	50	25	20	
	Personal Components	10(a).		/	5	
	Master Persersh Dreiget / Dreepestus	N/E		-		
				5		
	Theoretical / experimental research / colloquium	Master Research			10	
		Prospectus			10	
	Accomplishment and Defense of Master's Thesis	Theoretical /				
		experimental				30
		research /				00
		colloquium				
	<u>ر</u>	Total per semester:	30	30	30	30
		Total per year:	6	0	6	0

Total:	120

			ECTS Credi			
No	Course Title	Precondition of	ΙYe	ar	II Y	ear
11-	Course Thie	admit				
			Ι	II	III	IV
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5			
2	 2.1 Theory and Practice of Specialized Translation (English) 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) 	N/E		5		
3	Preparation and implementation of the invest projects in to the building	N/E	5			
4	Special course of Building Physics	N/E			10	
5	Heating special course	N/E	6			
6	Special Course of Aerodynamics and Ventilation.	N/E	7			
7	Air-conditioning and Smooth Supply	N/E		6		
8	Special Course of Gas Supply	N/E		8		
9	Buildings Energy Efficiency and Energy Saving	Heating special course			10	
10	Buildings Microclimate Automatic Control Systems	N/E	7			
11	Non-traditional Renewable Energy Technologies inCivil Engineering	N/E		6		
		Per semester	30	25	20	
		Total:		7	′5	
	Research Component:					
	Master Research Project / Prospectus	N/E		5		
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
]	lotal per semester:	30	30	30	30
		Total per year:	6	0	6	0
		Total:	120			

		admit	I Year		II Year	
	Course Title			Sem	ester	
			Ι	II	III	IV
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5			
2	2.1 Theory and Practice of Specialized Translation (English)2.2 Theory and Practice of Specialized Translation (Franch)2.3 Theory and Practice of Specialized Translation (German)2.4 Theory and Practice of specialized Translation (Russian)	N/E		5		
3	Preparation and implementation of the invest projects in to the building	N/E	5			
4	System approach for choosing the location of artificial structures	N/E	4			
5	Risk Investment Project Risks and Environmental and Social Impact Assessment	N/E			6	
6	Transport Knots and expressways	N/E		8		
7	Road Conditions and Traffic Safety	N/E		6		
8	Designing of Highways at Difficult Terrain	N/E	10			
9	Road construction technology and management of the difficult natural conditions	N/E		6		
10	Road Rehabilitation and Modernization	Road construction technology and management of the difficult natural conditions			6	
11	Landslide activiti on motor roads	N/E	6			
12	Surface of Road end Aerodromes	Designing of Highways at DifficultTerrain			8	
		Per semester	30	25	20	
		Total:		7	5	
	Research Component:					
	Master Research Project / Prospectus	N/E		5		
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
]	Total per semester:	30	30	30	30
		Total per year:	6	0	6	0
		Total:	120			

No	Course Title	Precondition of	f I Year II			ear
IN≊	Course Little	admit				
			Ι	II	III	IV
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5			
2	2.1 Theory and Practice of Specialized Translation (English)2.2 Theory and Practice of Specialized Translation (Franch)2.3 Theory and Practice of Specialized Translation (German)2.4 Theory and Practice of specialized Translation (Russian)	N/E		5		
3	Preparation and implementation of the invest projects in to the building	N/E	5			
4	Construction of Gas Supply Networks, Rehabilitation and Reconstruction	Gas pipelines and Gas Storages			10	
5	Gas Chemistry, Gas Combustion, Combustion Kinetics	N/E	8			
6	Gas Heating, Hot Water Preparing and Alternative Sources.	Gas pipelines and Gas Storages			10	
7	Vehicle Gas filling stations	N/E	5			
8	Gas pipelines and Gas Storages	N/E		6		
9	Special Course of Aerodynamics and Ventilation.	N/E	7			
10	Special Course of Engineering Thermodynamics	N/E		7		
11	Dimensional and Regulatory Equipment Using in Gas Facitities	N/E		7		
		Per semester	30	25	20	
		Total:		7	′5	:
	Research Component:	· · · · · · · · · · · · · · · · · · ·				
	Master Research Project / Prospectus	N/E		5		
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30
]	Fotal per semester:	30	30	30	30
		Total per year:	60 60			
		Total:	120			

No	Precondition of	ECTS Credits		
IN≊	admit	I Year	II Year	

	Course Title		Semester				
			Ι	II	III	IV	
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	N/E	5				
2	 2.1 Theory and Practice of Specialized Translation (English) 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) 	N/E		5			
3	Preparation and implementation of the invest projects in to the building	N/E	5				
4	The Theorits of Plasticity and creep	N/E	10				
5	Discrete Methods of Construction Mechanics	N/E			5		
6	Mechanics of the Flat and Spatial Systems	N/E		10			
7	The Theory of Structures	The Theorits of Plasticitiy and creep		10			
8	Elasticity Theory	N/E	10				
9	Mechanics of Rupture	N/E			5		
10	Mechanics of absolutely rigid body	N/E			5		
11	Construction Special Constructions	N/E			5		
		Per semester	30	25	20		
		Total:		7	5		
	Research Component:						
	Master Research Project / Prospectus	N/E		5			
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10		
	Accomplishment and Defense of Master's Thesis	Theoretical / experimental research / colloquium				30	
	7	Total per semester:	30	30	30	30	
		Total per year:	6	0	6	0	
		Total:		120			

Map of learning outcomes 1

Nº	Course Title	Knowledge and understanding	Ability to use knowledge in practice	Making judgments	communication skill	ability to learn	Values				
1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Russian)	X	X		X	X	x				
2	2.1 Theory and Practice of Specialized Translation (English)2.2 Theory and Practice of Specialized Translation (Franch)2.3 Theory and Practice of Specialized Translation (German)2.4 Theory and Practice of specialized Translation (Russian)	X X X X	X X X X	X X X X	X X X X		X				
3	Preparation and implementation of the invest projects in to the building		X		X						
4	Composite structures in construction	Х	X	Х	X	X					
5	Building technical Expertise	Х	Х	Х	X						
6	Theoretical studies of prestressed teroo-concrete struqtures	Х	Х	Х	X	X					
7	Mechanics of the Thin-walled Spatial Systems	X	X	X	X						
8	Strengthening Basic Foundations		v	37							
9	Special wood and plastic constructions	X	X	X	X X	X					
10	The building - building modern methods of calculation	X	X		X		X				
11	Transforming (space ground) structures and facilities	X	X	X	x						
11	Transforming (space, ground) structures and facilities										
12	Motal structure	x	x	x	x						
15		v	v	<u></u>	v						
14	Reconstruction of building-masked frames of building- structures	X	X	X	X						
16	Management, design and security in emergency situations	X	X	X	X	X	X				
	Research Component:										
	Master Research Project / Prospectus	X	X	X	X	X	X				
	Theoretical / experimental research / colloquium	X	Х	Х	X	Х	Х				
	Accomplishment and Defense of Master's Thesis	X	Х	X	X	X	X				
	2										
1	Soil Mechanics	Х	X	X	X	X					
2	Foundation Engineering	X	X	X	X	X					
3	Computer Programs for Designing Buildings	X	X v	X	X v						
4	Surengunening basic roundations		Λ 	Λ 							
5	Reconstruction of building-masked frames of building-	Х	X	X	X						

	structures						
6	City Engineering Structure	Х	Х	X	X		
7	Depreciation of buildings	X	X	X	X		
8	Geotechnical engineering	X	X	X	X		
	Research Component:						
	Master Research Project / Prospectus	X	Х	X	X	X	X
	Theoretical / experimental research / colloquium	x	X	X	x	x	x
	Accomplishment and Defense of Master's Thesis	X	X	X	X	X	X
	recomprisiment and Derense of Master's Thesis			11			11
	3						
	Software Package of Mathematical Models of Computational	X	Х	X	X		
1	Processes						
2	Construction Economics	Х	Х	X			
3	Building Materiology	Х	Х	X		Х	
4	Technologies of construction	Х	Х		X		
5	Construction Special Constructions	Х	Х	X	X	X	X
(Construction legislation and normative documentation on						
0	construction	Х	Х	X			
7	Building buildings, diagnostics, reconstruction,						
	modernization	X	X	X	X		
8	Technology of building special facilities	X	X	X			
9	Viable technological solutions of building processes and buildings	Х	Х	X			
10	Monolithic building-building technology	Х	Х	X			
11	Energysaving technologies in construction	Х	Х	X			
	Research Componen	nt:					
	Master Research Project / Prospectus	X	Х	X	X	X	X
	Theoretical / experimental research / colloquium	Х	Х	X	Х	Х	X
	Accomplishment and Defense of Master's Thesis	Х	Х	X	X	Х	X
1	4 Numerical Methods of Solving Construction Tasks	X	X	X	X		
2	Structured Programming with C++ Language	X	X	X	X	X	
3	Application of The optimization methods in construction	X	X	X	X		
4	Construction Special Constructions	Х	Х	X	Х	Х	X
5	Application of the finite elements method in construction	X	X	X			
6	Control of date Bases Visual FoxPro	X	Х	X	X	X	
7	Computer Programs for Designing Buildings	X	X	X	X		
8							
0	Software Package of Mathematical Models of Computational Processes	Х	Х	Х	Х		
9	Software Package of Mathematical Models of Computational Processes Reconstruction of building-masked frames of building- structures	X X	X X	X X	X X		
9	Software Package of Mathematical Models of Computational Processes Reconstruction of building-masked frames of building- structures Research Compone	X X ent:	X X	X X	X X		
9	Software Package of Mathematical Models of Computational Processes Reconstruction of building-masked frames of building- structures Research Compone Master Research Project / Prospectus	X X ent: X	X X X	X X X	X X X	X	X
9	Software Package of Mathematical Models of Computational Processes Reconstruction of building-masked frames of building- structures Research Compone Master Research Project / Prospectus Theoretical / experimental research / colloquium	X X ent: X X	X X X X X	X X X X X	X X X X X	X X	X X X

	5									
1	Theory and Methodology for Computation of Water Supply and Distribution and Computer Provision	X	X		X					
2	Designing water supply and sewerage systems for residential and industrial facilities	Х		X	X	X				
3	Water Supply and Wastewater Pumping Saddles Design	Х	Х	X		X				
4										
5	Design of Wastewater Treatment Structures	Х	Х	X						
6	Rational use, monitoring and protection of water resources	Х	Х		X					
7										
	Research Component:									
	Master Research Project / Prospectus	Х	Х	X	X	X	Х			
	Theoretical / experimental research / colloquium	Х	Х	X	X	X	X			
	Accomplishment and Defense of Master's Thesis	Х	Х	X	X	X	Х			
	6									
1	Engineering Hydroecology	Х	Х	X			X			
2	Flood Risk Management	Х	Х	X						
3	The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations.	X	Х	x	X					
4	Economic justification for the construction of Hydroelectric power plants	х	Х	x	X					
5	Financing methods of investment projects in hydro energy	X	X	x	X					
6	Production of Hydraulic Construction Using Modern Technologies	X	Х	x	X					
7	Projecting of hydroelectric power plants and Modes of operation	Х	Х	X	X					
8	Organization of construction of Hydroelectric power plants	X	X	X	X					
	Research Component:									
	Master Research Project / Prospectus	X	Х	X	X	X	X			
	Theoretical / experimental research / colloquium	Х	Х	X	Х	Х	Х			
	Accomplishment and Defense of Master's Thesis	Х	Х	X	Х	X	X			
	7									
1	Engineering Hydroecology	X	Х	X			X			
2	Flood Risk Management	Х	Х	X						
3	Strength and Seismicity Resistance of Hydraulic of Structures	Х	Х	X						
4	Strength and Seismicity Resistance of Hydraulic of Structures	X	Х	X						
5	Hydraulics of Structures	Х	Х	X						
6	Design and construction of Hydraulic Structures	X	Х	X						
7	Production of Hydraulic Construction Using Modern Technologies	x	X	x	x					
	Research Component:			1	1	1	1			

Theoretical / experimental research / colloquium X		Master Research Project / Prospectus	Х	Х	X	X	X	Х				
Accomplishment and Defense of Master's Thesis X <th< td=""><td></td><td>Theoretical / experimental research / colloquium</td><td>Х</td><td>Х</td><td>X</td><td>X</td><td>X</td><td>Х</td></th<>		Theoretical / experimental research / colloquium	Х	Х	X	X	X	Х				
8 1 Engineering Hydroecology X		Accomplishment and Defense of Master's Thesis	Х	Х	Х	X	X	Х				
1 Engineering Hydrocology X <td></td> <td colspan="11">8</td>		8										
2 Natural disasters and engineering measures to ensure safety X<	1	Engineering Hydroecology	Х	Х	X			X				
3 Computer programming in marine construction X	2	Natural disasters and engineering measures to ensure safety	Х	Х	Х	Х						
4 Seaports and Constructions of the Continental Shelf X X X X 5 Calculation methods of wave movements in coastal areas X X X X 6 Shipping roads and ports X X X X X 7 Organization and production of marine hydraulic structures. X X X X X 8 Economic foundation of sea port construction X	3	Computer programming in marine construction	Х	Х	Х	Х						
5 Calculation methods of wave movements in coastal areas X X X X X 6 Shipping roads and ports X X X X X X 7 Organization and production of marine hydraulic structures. X X X X X X 8 Economic foundation of sea port construction X	4	Seaports and Constructions of the Continental Shelf	Х	Х	Х		X					
6 Shipping roads and ports X X X X X X X 7 Organization and production of marine hydraulic structures. X	5	Calculation methods of wave movements in coastal areas	X	Х	X		X					
7 Organization and production of marine hydraulic structures. X X X X X 8 Economic foundation of sea port construction X	6	Shipping roads and ports	Х	Х	X	X						
8 Economic foundation of sea port construction X X X X Research Component: Master Research Project / Prospectus X <th< td=""><td>7</td><td>Organization and production of marine hydraulic structures.</td><td>Х</td><td>Х</td><td>X</td><td>X</td><td></td><td></td></th<>	7	Organization and production of marine hydraulic structures.	Х	Х	X	X						
Research Component:Master Research Project / ProspectusXXXXXXTheoretical / experimental research / colloquiumXXXXXXAccomplishment and Defense of Master's ThesisXXXXXX9	8	Economic foundation of sea port construction	Х	Х	X							
Master Research Project / ProspectusXXXXXXXXTheoretical / experimental research / colloquiumXXXXXXXAccomplishment and Defense of Master's ThesisXXXXXXX91Risk Investment Project Risks and Environmental and Social Impact AssessmentXXXXXX2System approach for choosing the location of artificial structuresXXXXXX3Urban underground structures and subwaysXXXXXX4Mechanics of underground structures and design of transport tunnels in seismic zonesXXXXX5Restoration and reconstruction of transport tunnelsXXXXXX6Calculation of road artificial structures and seismic resistant bridgesXXXXXX7Reinforced concrete large span bridgesXXXXXXX9Modern methods of construction thebig-spanbridges and their survey-testingXXXXXXX10101System approach for choosing the location of artificial structuresXXXXXX2Risk Investment Project for choosing the location of artificial structuresXXXXX101010	Research Component:											
Theoretical / experimental research / colloquiumXXXXXXXAccomplishment and Defense of Master's ThesisXXXXXXX9		Master Research Project / Prospectus	Х	Х	Х	X	Х	Х				
Accomplishment and Defense of Master's Thesis X <th< td=""><td></td><td>Theoretical / experimental research / colloquium</td><td>Х</td><td>Х</td><td>X</td><td>X</td><td>Х</td><td>Х</td></th<>		Theoretical / experimental research / colloquium	Х	Х	X	X	Х	Х				
9 1 Risk Investment Project Risks and Environmental and Social X X X X X X X 2 System approach for choosing the location of artificial X X X X X X 3 Urban underground structures and subways X X X X X X 4 Mechanics of underground structures and design of transport tunnels in seismic zones X X X X X X 5 Restoration and reconstruction of transport tunnels X X X X X 6 Calculation of road artificial structures and seismic resistant bridges X X X X X 7 Reinforced concrete large span bridges X X X X X 8 Large span steel bridges X X X X X X 9 Modern methods of construction thebig-spanbridges and their survey-testing X X X X X 1 Master Research Project / Prospectus X X X X X X		Accomplishment and Defense of Master's Thesis	Х	Х	Х	Х	Х	Х				
1 Risk Investment Project Risks and Environmental and Social Impact Assessment X<		9										
2System approach for choosing the location of artificial structuresXXXX3Urban underground structures and subwaysXXXXX4Mechanics of underground structures and design of transport tunnels in seismic zonesXXXXX5Restoration and reconstruction of transport tunnelsXXXXXX6Calculation of road artificial structures and seismic resistant bridgesXXXXXX7Reinforced concrete large span bridgesXXXXXXX8Large span steel bridgesXXXXXXX9Modern methods of construction thebig-spanbridges and their survey-testingXXXXXX7Research Project / ProspectusXXXXXX9Master Research Project / ProspectusXXXXXX10Theoretical / experimental research / colloquiumXXXXX101System approach for choosing the location of artificial structuresXXXX2Risk Investment Project Risks and Environmental and Social Impact AssessmentXXXXX3Calculation the Railroad Track for strength and stabilityXXXXX	1	Risk Investment Project Risks and Environmental and Social Impact Assessment	Х	Х	X			X				
3 Urban underground structures and subways X <td>2</td> <td>System approach for choosing the location of artificial structures</td> <td>Х</td> <td></td> <td>X</td> <td></td> <td>X</td> <td></td>	2	System approach for choosing the location of artificial structures	Х		X		X					
4Mechanics of underground structures and design of transport tunnels in seismic zonesXXXXX5Restoration and reconstruction of transport tunnelsXXXXXX6Calculation of road artificial structures and seismic resistant bridgesXXXXXX7Reinforced concrete large span bridgesXXXXXXX8Large span steel bridgesXXXXXXX9Modern methods of construction thebig-spanbridges and their survey-testingXXXXXX7Research Project / ProspectusXXXXXXX9Master Research Project / ProspectusXXXXXXX1System approach for choosing the location of artificial 	3	Urban underground structures and subways	Х	Х	X	X	X					
5Restoration and reconstruction of transport tunnelsXXXXXX6Calculation of road artificial structures and seismic resistant bridgesXXXXX7Reinforced concrete large span bridgesXXXXXX8Large span steel bridgesXXXXXX9Modern methods of construction thebig-spanbridges and their survey-testingXXXXX1Master Research Project / ProspectusXXXXXX7Reoretical / experimental research / colloquiumXXXXX101System approach for choosing the location of artificial structuresXXXXX2Risk Investment Project Risks and Environmental and Social Impact AssessmentXXXXX3Calculation the Railroad Track for strength and stabilityXXXXX	4	Mechanics of underground structures and design of transport tunnels in seismic zones	Х	Х	X		x					
6 Calculation of road artificial structures and seismic resistant bridges X X X X X 7 Reinforced concrete large span bridges X X X X X X 8 Large span steel bridges X X X X X X X 9 Modern methods of construction thebig-spanbridges and their survey-testing X <td>5</td> <td>Restoration and reconstruction of transport tunnels</td> <td>Х</td> <td>Х</td> <td>Х</td> <td>X</td> <td>X</td> <td>X</td>	5	Restoration and reconstruction of transport tunnels	Х	Х	Х	X	X	X				
OrtagesXXXX7Reinforced concrete large span bridgesXXXXX8Large span steel bridgesXXXXXX9Modern methods of construction thebig-spanbridges and their survey-testingXXXXXX9Master Research Project / ProspectusXXXXXX7Master Research Project / ProspectusXXXXXX7Theoretical / experimental research / colloquiumXXXXXX8Accomplishment and Defense of Master's ThesisXXXXXX101System approach for choosing the location of artificial structuresXXXXX2Risk Investment Project Risks and Environmental and Social Impact AssessmentXXXXX3Calculation the Railroad Track for strength and stabilityXXXXX4Interaction Between the Railway and Bolling StockXXXXX	6	Calculation of road artificial structures and seismic resistant	X	Х	X		X					
8 Large span steel bridges X </td <td>7</td> <td>Reinforced concrete large span bridges</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td>	7	Reinforced concrete large span bridges	X	X	X	X	X					
8 Large span steer bruges X X X X X X X 9 Modern methods of construction thebig-spanbridges and their survey-testing X <	8	I arga span staal bridges	x	x	x	X	X					
9 Interaction file for spaniol ages and the interverse of the interverse o	0	Large span steer bridges Modern methods of construction thebig-spanbridges and	X	X	X	X	X					
Research Component:Master Research Project / ProspectusXXXXXTheoretical / experimental research / colloquiumXXXXXAccomplishment and Defense of Master's ThesisXXXXX1System approach for choosing the location of artificial structuresXXXXX2Risk Investment Project Risks and Environmental and Social Impact AssessmentXXXXX3Calculation the Railroad Track for strength and stabilityXXXXX4Interaction Between the Railway and Rolling StockXXXXX	9	their survey-testing										
Master Research Project / ProspectusXXXXXTheoretical / experimental research / colloquiumXXXXXAccomplishment and Defense of Master's ThesisXXXXX10System approach for choosing the location of artificial structuresXXXX2Risk Investment Project Risks and Environmental and Social Impact AssessmentXXXX3Calculation the Railroad Track for strength and stabilityXXXX4Interaction Between the Railway and Rolling StockXXXX		Research Component:				1						
Theoretical / experimental research / colloquiumXXXXXAccomplishment and Defense of Master's ThesisXXXXXX1System approach for choosing the location of artificial structuresXXXXX2Risk Investment Project Risks and Environmental and Social Impact AssessmentXXXXX3Calculation the Railroad Track for strength and stabilityXXXXX4Interaction Between the Railway and Rolling StockXXXXX		Master Research Project / Prospectus	Х	Х	X	X	X	X				
Accomplishment and Defense of Master's Thesis X <th< td=""><td></td><td>Theoretical / experimental research / colloquium</td><td>X</td><td>Х</td><td>X</td><td>X</td><td>X</td><td>X</td></th<>		Theoretical / experimental research / colloquium	X	Х	X	X	X	X				
Impact Assessment Impact Assessment X X X Impact Assessment X X X X		Accomplishment and Defense of Master's Thesis	X	Х	X	X	X	X				
1System approach for choosing the location of artificial structuresXXXX2Risk Investment Project Risks and Environmental and Social Impact AssessmentXXXX3Calculation the Railroad Track for strength and stabilityXXXX4Interaction Between the Railway and Rolling StockXXXX		10										
2Risk Investment Project Risks and Environmental and Social Impact AssessmentXXX3Calculation the Railroad Track for strength and stabilityXXXX4Interaction Between the Railway and Rolling StockXXXX	1	System approach for choosing the location of artificial structures	X		X		X					
3 Calculation the Railroad Track for strength and stability X X X 4 Interaction Between the Railway and Rolling Stock X X X	2	Risk Investment Project Risks and Environmental and Social Impact Assessment	Х	х	X			x				
4 Interaction Between the Railway and Rolling Stock X X X X	3	Calculation the Railroad Track for strength and stability	X	Х	X	X						
1 interaction between the ran way and normal other	4	Interaction Between the Railway and Rolling Stock	Х	Х	X	X						
5 Expressway and Specialized Railways X X X	5	Expressway and Specialized Railways	X	X	X							
6Providing of Tran traffic safety in complex conditionXXX	6	Providing of Tran traffic safety in complex condition	Х	Х	X		X					

7	Modernization and Strengthening of Existing Railways	X	Х	X	X	X				
8	Railway construction in difficult conditions	X	X	X	X	X				
9	Track monitoring and assessment of the status of rail faults	Х	Х	X	Х					
	Research Component:									
	Master Research Project / Prospectus	X	Х	X	X	X	X			
	Theoretical / experimental research / colloquium	Х	Х	X	X	Х	Х			
	Accomplishment and Defense of Master's Thesis	X	Х	X	X	Х	X			
	11	<u>.</u>		·	·	·	-			
1	Technical diagnosis	Х	Х	X	Х					
2	Active and Passive Systems for Protection of Structures	Х	X	X	X					
3	Causes, inspections and restoration of building structures	X	X	X	X					
4	Non-infringing Control Methods	X	X	X	X					
5	The Technikal Diagnostics of Construqcion Damige	Х	Х	X	X					
6	Mechanics of Rupture	Х	Х	X	X					
7	Building technical exspertize	Х	X	X	X					
8	Construction Special Constructions	X	X	X	X	X	X			
9	Reconstruction of building-masked frames of building-	X	Х	X	X					
<u> </u>	Research Component:									
	Master Research Project / Prospectus	X	X	X	X	X	X			
	Theoretical / experimental research / colloquium	X	X	X	X	X	X			
	Accomplishment and Defense of Master's Thesis	X	X	X	X	X	X			
	12									
1	Software Package of Mathematical Models of Computational Processes	Х	Х	X	X					
2	Construction Economics	Х	Х	X						
3	Monolithic building-building technology	X	X	X						
4	Concrete sciences	Х		X		X				
5	Facilities of building materials manufactures	Х	Х	X						
6	Construction Special Constructions	Х	Х	X	X	Х	Х			
7	Moderm methods of building materials physical and mechanical properties study	X	Х	X			X			
8	Construction Materials research and control methods	X	X	X			X			
9	Building materials substrances, fillers and items	X	X	Х		X				
10	Desingn for enterprise of building materials	Х	Х	X	Х					
	Research Component:									
	Master Research Project / Prospectus	X	Х	X	X	X	X			
	Theoretical / experimental research / colloquium	X	Х	X	X	X	X			
	Accomplishment and Defense of Master's Thesis	X	Х	Х	X	Х	X			
	13									
1	Special courseof Building Physics	X	X	X	X					
2	Heating	Х	X	X	X					
3	Special Course of Aerodynamics and Ventilation.	Х	X	X						

4	Air-conditioning and Smooth Supply	Х	Х	X	X					
5	Special Course of Gas Supply	X	Х	X	X					
6	Buildings Energy Efficiency and Energy Saving	X	Х	X	X					
7	Buildings Microclimate Automatic Control Systems	X	Х	X	X					
8	Non-traditional Renewable Energy Technologies inCivil	X	Х	X	X					
	Research Component:									
	Master Research Project / Prospectus	Х	Х	X	X	X	X			
	Theoretical / experimental research / colloquium	X	Х	X	X	X	X			
	Accomplishment and Defense of Master's Thesis	X	Х	X	X	X	X			
	14									
1	System approach for choosing the location of artificial structures	Х		X		X				
2	Risk Investment Project Risks and Environmental and Social Impact Assessment	Х	Х	Х			X			
3	Transport Knots and expressways	X	Х	X	X	X				
4	Road Conditions and Traffic Safety	X	Х	X	X	X	X			
5	Designing of Highways at DifficultTerrain	X	Х	X	X	X	X			
6	Road construction technology and management of the difficult natural conditions	X	Х				X			
7	Road Rehabilitation and Modernization	X	Х	X		X				
8	Landslide activiti on motor roads	X	Х	X	X					
9	Surface of Roadend Aerodromes	Х	Х	X	Х					
	Research Component:			1	1	1				
	Master Research Project / Prospectus	X	Х	X	X	X	X			
	Theoretical / experimental research / colloquium	X	X	X	X	X	X			
	Accomplishment and Defense of Master's Thesis	Х	X	X	X	X	X			
	15									
1	Reconstruction	Х	Х	X	X					
2	Gas Chemistry, Gas Combustion, Combustion Kinetics	Х	Х			X				
3	Gas Heating, Hot Water Preparing and Alternative Sources.	Х	Х	Х	Х					
4	Vehicle Gas filling stations									
5	Gas pipelines and Gas Storages									
6	Special Course of Aerodynamics and Ventilation.	Х	Х	X						
7	Special Course of Engineering Thermodynamics	Х	Х	Х	Х					
8	Dimensional and Regulatory Equipment Using in Gas Facitities	X	Х	X						
	Research Component:									
	Master Research Project / Prospectus	Х	Х	X	X	X	Х			
	Theoretical / experimental research / colloquium	Х	Х	Х	Х	Х	Х			
	Accomplishment and Defense of Master's Thesis	Х	Х	X	X	X	X			
	16									

1	The Theorits of Plasticity and creep	Х	Х	Х	Х						
2	Discrete Methods of Construction Mechanics	Х	Х	X							
3	Mechanics of the Flat and Spatial Systems	Х	Х	X	X						
4	The Theory of Structures	Х	Х	X	Х						
5	Elasticity Theory	Х	Х	X							
6	Mechanics of Rupture	Х	Х	X	X						
7	Mechanics of absolutely rigid body	X	Х	X		X					
8	Construction Special Constructions	Х	Х	Х	Х	Х	Х				
	Research Component:										
	Master Research Project / Prospectus	X	Х	Х	X	X	Х				
	Theoretical / experimental research / colloquium	Х	Х	X	X	Х	Х				
	Accomplishment and Defense of Master's Thesis	X	Х	X	X	X	Х				

Program curriculum

				Hours										
Nº	Course code	Course Title	ESTS credits / hours	Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work		
1	LEH12412G1 LEH12212G1 LEH12612G1	1.1 Business Communication (English)1.2 Business Communication (French)1.3 Business Communication (German)1.4 Business Communication (Bussian)	125			45				2	2	76		
2	LEH12512G1 LEH12312G1 LEH12712G1 LEH12912G1	 2.1 Theory and Practice of Specialized 2.2 Theory and Practice of Specialized Translation (Franch) 2.3 Theory and Practice of Specialized Translation (German) 2.4 Theory and Practice of specialized Translation (Russian) 	125	15		30				2	2	76		
3	AAC85601G1	Preparation and implementation of the invest projects in to the building	125	15		30				1	1	78		
4	AAC85701G1	Composite structures in construction	125	15		30				1	1	78		
5	AAC85801G1	Building technical Expertise	100	15		15				1	1	68		
6	AAC85901G1	Theoretical studies of prestressed teroo- concrete strugtures	125	15		15			15	1	1	78		
7	AAC86001G1	Mechanics of the Thin-walled Spatial Systems	125	15		30				1	1	78		
8	AAC86101G1	Strengthening Basic Foundations	100	15		15				1	1	68		
9	AAC86201G1	Special wood and plastic constructions	125	15		15			15	1	1	78		
10	AAC85601G1	The building building modern methods of calculation	125	15	30					1	1	78		
11	AAC42901G2	Transforming (space, ground) structures and facilities	100	15		15				1	1	68		
12			100							1	1	68		
13	AAC86301G1	Metal structure	125	15			15		15	1	1	78		
14	AAC86401G1	Reinforced concrete structures	125	15		15			15	1	1	78		
15	AAC85001G1	Reconstruction of building-masked frames of building-structures	125	15		15			15	1	1	78		
16	AAC86501G1	Management, design and security in	100	15		15				1	1	68		
	<u> </u>	2	1		1			1			1	1		
1	AAC86601G1	Soil Mechanics	250	30		45				1	1	173		
2	AAC86701G1	Foundation Engineering	250	30		15			30	1	1	173		
3	AAC86801G1	Computer Programs for Designing Buildings	150	30			30			1	1	88		
4	AAC86001G1	Strengthening Basic Foundations	225	30		7,5			30	1	1	155,5		

_	AAC85001G1	Reconstruction of building-masked	105	1.5								
5		frames of building-structures	125	15		15			15	1	1	78
6	AAC86901G1	City Engineering Structure	150	30		15			15	1	1	88
7	AAC87001G1	Depreciation of buildings	225	30		15			22,5	1	1	155,5
8	AAC87101G1	Geotechnical engineering	125	15		30				1	1	78
	1		1	1						1		1
	3											
1	AAC87201G1	Software Package of Mathematical	125	15		30				1	1	78
		Models of Computational Processes	125	15		50				1	1	70
2	AAC87301G1	Construction Economics	125	15	30					1	1	78
3	AAC87401G1	Building Materiology	125	15			30			1	1	78
4	AAC31101G1	Technologies of construction	150	30	30					1	1	88
5	AAC87701G1	Construction Special Constructions	125	15		15			15	1	1	78
6	AAC30901G1	Construction legislation and normative	125	15	30					1	1	78
		documentation on construction	125	15						-	-	10
7	AAC31201G1	Building buildings, diagnostics,	125	15		30				1	1	78
		reconstruction, modernization										
8	AAC31301G1	Technology of building special facilities	125	15	30					1	1	78
9	AAC87501G1	Viable technological solutions of	175	30		30				1	1	113
		building processes and buildings										
10	AAC30801G1	Monolithic building-building	175	15	15	30				1	1	113
	1.1.000701.01	technology										
11	AAC30/01G1	Energysaving technologies in	125	15	30					1	1	78
		construction										
			4									
	ICT40201G1	Numerical Methods of Solving										
1		Construction Tasks	150	30		30				1	1	88
	ICT40501G1	Structured Programming with C++										155,5
2		Language	225	15		22,5	30			1	1	
	ICT40301G1	Application of The optimization										155,5
3		methods in construction	225	15		22,5	30			1	1	
4	AAC87701G1	Construction Special Constructions	125	15		15			15	1	1	78
_	ICT40401G1	Application of the finite elements	0.05									1
5		method in construction	225	30		37,5				1	1	155,5
6	ICT20801G1	Control of date Bases Visual FoxPro	150	15		30	15			1	1	88
7	AAC86801G1	Computer Programs for Designing	150	20		20				1	1	00
1		Buildings		30		30				1	1	88
0	AAC87201G1	Software Package of Mathematical	150	20		20				1	1	00
0		Models of Computational Processes		50		50				1	1	00
0	A A C85001C1	Reconstruction of building-masked	100	15		15				1	1	68
	7760300101	frames of building-structures	100	15		15				1	1	00
			5									
	1 1 001 501 61	L				1						
	AAC01501G1	Theory and Methodology for	a						~ ~	_		
1		Computation of Water Supply and	250	15		30			30	1		173
	A A CO1 CO1 C1	Distribution and Computer Provision										
	AACUIOUIGI	Designing water supply and sewerage	050						4-	1	1	100
2		systems for residential and industrial	250	30					45			1/3
-	A A C40401C2		005	15		22.5			20	1	1	155 5
		Water Numby and Wastewater Pumping	1775	1.5		22.5			30	i I	1	155.5

		Saddles Design										
4			200						1	1	138	
5	AAC01701G1	Design of Wastewater Treatment Structures	175	15		45			1	1	113	
6	AAC89201G1	Rational use, monitoring and protection of water resources	175	30	30				1	1	113	
7			225						1	1	155,5	
6												
1	AAC88101G1	Engineering Hydroecology	150	30	30				1	1	88	
2	AAC33301G1	Flood Risk Management	150	30		30			1	1	88	
3	AAC88201G1	The use of statistical methods and stochastic models in the design and operation of hydroelectric power stations.	225	30		22,5		15	1	1	155,5	
4	AAC88301G1	Economic justification for the construction of Hydroelectric power plants	200	30		15		22,5	1	1	130	
5	AAC88401G1	Financing methods of investment projects in hydro energy	225	30		22,5		15	1	1	155,5	
6	AAC88501G1	Production of Hydraulic Construction Using Modern Technologies	225	30	15	22,5			1	1	155,5	
7	AAC01401G1	Projecting of hydroelectric power plants and Modes of operation	175	30		15		15	1	1	113	
8	AAC88701G1	Organization of construction of Hydroelectric power plants	150	15		15		30	1	1	88	
	7											
1	AAC88101G1	Engineering Hydroecology	150	30	30				1	1	88	
2	AAC33301G1	Flood Risk Management	150	30		30			1	1	88	
3	AAC33501G1	Strength and Seismicity Resistance of Hydraulic of Structures	250	30		30		15	1	1	173	
4	AAC33601G1	Strength and Seismicity Resistance of Hydraulic of Structures	250	30		30		15	1	1	173	
5	AAC33701G1	Hydraulics of Structures	225	30		30			1	1	155,5	
6	AAC88801G1	Design and construction of Hydraulic Structures	250	30		30		15	1	1	173	
7	AAC88501G1	Production of Hydraulic Construction Using Modern Technologies	225	30	15	22,5			1	1	155,5	
8												
1	AAC88101G1	Engineering Hydroecology	150	30	30				1	1	88	
2	AAC88901G1	Natural disasters and engineering	125	30		15			1	1	78	
3	ICT19501G1	Computer programming in marine construction	225	30		37,5			1	1	155,5	
4	AAC33801G1	Seaports and Constructions of the Continental Shelf	250	30		15		30	1	1	173	
5	AAC33901G1	Calculation methods of wave movements in coastal areas	250	30		30		15	1	1	173	
6	AAC89001G1	Shipping roads and ports	150	30		15		15	1	1	88	
7	AAC34001G1	Organization and production of marine	225	30		22,5		15	1	1	155,5	

8 AAC4401G1 Economic foundation of sea port construction. 125 15 30 30 10 1 1 78 9 AAC63501G1 Risk Investment Project Risks and Environmental and Social Impact 100 30 <th></th> <th></th> <th>hydraulic structures.</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>			hydraulic structures.									
8 construction. 12 15 30 1 1 78 9 AAC43301G1 Risk Investment Project Risks and Environmental and Social Impact 100 30 30 30 1 1 1 88 2 AAC43101G1 System approach for choosing the Iocacion of artificial structures and subways 100 30 1 1 10 68 3 AAC44001G1 Mechanics of underground structures and subways 200 15 22.5 30 0 1 1 10 68 4 AAC44001G1 Mechanics of underground structures and asign cresstant bridges 175 30 15 22.5 10 1 1 13 5 AAC4401G1 Reinforced concrete large span bridges 175 30 15 15 15 1 1 1 13 6 AAC4801G1 Reinforced concrete large span bridges 175 30 15 15 15 1 1 1 13 7 AAC48301G1 Reinforced concrete large span bridges 175 30 30 30 1 </td <td></td> <td>AAC34101G1</td> <td>Economic foundation of sea port</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><u> </u></td> <td></td>		AAC34101G1	Economic foundation of sea port								<u> </u>	
AAC43001CI Risk Investment Project Risks and AAC43001CI Isis Investment Project Risks and Assessment Isis 30 30 30 31 1 1 88 2 AAC4301CI System approach for choosing the Location of artificial structures 100 30 2 2 30 1 1 130.5 3 AAC4901CI Urban underground structures and seismic zones 100 30 2 2 30 1 1 130.5 4 AAC4901CI Wechanics of underground structures and design of transport tunnels in seismic zones 125 30 15 2.25 1 1 1 133.5 5 AAC4901CI Restoration and reconstruction of ransport tunnels 175 30 15 15 1 1 1 133.5 6 AAC4901CI Restoration and reconstruction of ransport tunnels 175 30 15 15 1 1 1 133.5 7 AAC43001CI Restoration and reconstruction of ransport tunnels 175 30 15 15 1 1 1 133.5 7 AAC43001CI	8		construction.	125	15		30			1	1	78
Accession in action of artificial structures and espine control of the espine bridges and bridge and espine control of the espine bridges and bridge and espine control of read artificial structures and espine control of the espine bridges and bridge an												
AAC49501G1 Environmental and Social Impact Assessment Isis Investment Project Risks and Assessment Isis Investment Project Risks and Environmental and Social Impact Assessment Isis Investment Projec		9										
AAC4301061 Risk Investment Project Risks and Environmental and Social Impact Assessment 150 30 <t< td=""><td></td><td colspan="11"></td></t<>												
1 AAC430107 Environmental and Social Impact 150 30 30 20 10 10 10 10 30 30 20 10 10 10 10 30 20 10 <td< td=""><td></td><td>AAC43501G1</td><td>Risk Investment Project Risks and</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>		AAC43501G1	Risk Investment Project Risks and									
Assessment Assesss	1		Environmental and Social Impact	150	30	30				1	1	88
AAC45101G1 System approach for choosing the location of artificial structures 100 30 1 1 68 AAC4501010 Urban underground structures and subways 200 15 22.5 30 1.1 1 130.5 AAC45010161 Mechanics of underground structures and seign of transport tunnels in and design of transport tunnels 175 30 30 1.5 2.25 1.1 1 155.5 AAC4501012 Restoration and reconstruction of 225 30 1.5 1.5 1.5 1.5 1.1 1 113 AAC4520102 Reinforced concrete large span bridges 175 30 1.5 1.5 1.5 1.1 1 113 AAC4520102 Reinforced concrete large span bridges 175 30 1.5 1.5 1.1 1 113 AAC4520102 Meder methods of construction the holes of construction the blog spanbridges and their survey-testing 1.5 30 30 2.5 30 1.5 1.1 1 1.8 AAC430101 Moder methods of construction and structures 1.00 30 2.0 2.0 1.5 1.1 1			Assessment									
10 30 30 30 4 1 1 1 3 AC4340161 Urban underground structures and design of ransport tunnels in subways 10 15 22.5 30 30 1 1 130.5 AC4490161 Mechanics of underground structures and design of ransport tunnels in and seismic rostatution of road artificial structures and seismic rostatut bridges 125 30 15 22.5 1 1 1 135 AC450161 Calculation of road artificial structures and seismic resistant bridges 175 30 15 15 1 1 113 AC4520161 Reinforced concrete large span bridges 175 30 15 30 15 15 1 1 113 AC4530161 Risk Investment Project Risk and Environmental and Social Impact 170 30 30 15 15 1 1 188 AC4390161 Interaction Between the Railway and Social Impact 150 30 30 30 30 15 1 1 188 AAC4390161		AAC45101G1	System approach for choosing the									68
AAC4540161 Urban underground structures and subways 200 15 2.2.5	2		location of artificial structures	100	30					1	1	
3 ACC4901G1 Mechanics of underground structures and seismic zones 200 15 22.5 30 1 1 130.5 5 AAC4901G1 Mechanics of underground structures and seismic zones 175 30 15 22.5 1 1 11 155.5 6 AAC45001G1 Restoration and reconstruction of zansport unnels 125 30 15 15 15 1 1 155.5 6 AAC45001G1 Restoration and reconstruction of zans port unnels 125 30 15 15 15 1 1 113 8 AAC44001G1 Reinforced concrete large span bridges 175 30 15 15 15 1 1 113 8 AAC450101G1 Modern methods of construction the testing 175 30 15 15 15 1 1 113 9 AAC450101G1 System approach for choosing the testing 100 30 2 2 1 1 1 1 18 1 1 1 1 1 1 1 1 1 <		AAC45401G1	Urban underground structures and									
AAC44901G1 Mechanics of underground structures and design of transport tunnels in seismic zones 175 30 30 30 30 1 1 113 5 AAC45001G1 Restoration and reconstruction of transport tunnels in seismic resistant bridges 125 30 1 15 1 1 113 6 AAC45001G1 Calculation of road artificial structures and seismic resistant bridges 175 30 15 15 1 1 113 7 AAC45201G1 Reinforced concrete large span bridges 175 30 15 15 1 1 113 7 AAC44901G1 Modern methods of construction in thebig-spanbridges and their survey- testing 175 30 15 1 1 113 7 AAC45101G1 Modern methods of constructures in thebig spanbridges and their survey- testing 100 30 2 1	3		subways	200	15		22,5		30	1	1	130,5
4 and design of transport numbes in science ones service ones service ones service ones service ones ones one		AAC44901G1	Mechanics of underground structures									
Accession conses Dission conses Dissi	4		and design of transport tunnels in	175	30		30			1	1	113
AC4500101 Restoration and reconstruction of transport tunnels 225 30 31 32 31 31 35 AC45007013 Calculation of nod artificial structures and seismic resistant bridges 125 30 15 15 1 1 13 AC450070131 Reinforced concrete large span bridges 175 30 15 15 1 1 113 AC4530161 Reinforced concrete large span steel bridges 175 30 15 15 1 1 113 AC4530161 Modern methods of construction thebig-spanbridges and heir survey- testing 175 30 30 15 1 1 113 AC4530161 System approach for choosing the location of artificial structures 100 30 2 2 2 30 1 1 18 AC4530161 System approach for choosing the location of artificial structures 100 30 30 30 30 1 1 18 AC4530161 Risk Investment Project Risks and Environmental and Scill Impact Assessment 30	1		seismic zones	175	00					-	1	110
5 Interface Production and reconstruction of a signal construction of signal construction of signal construction of a signal construction of signal construction of signal construction of signal construction of a signal construction of signal construction of signal construction construction of signal construction constructon construction constructon construc		AAC45001G1	Restoration and reconstruction of									
ACCOUNCIC Calculation of road artificial structures and seismic resistant bridges 125 30 15 15 1< 1< 78 ACCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	5		transport tuppels	225	30		15		22,5	1	1	155,5
6 Notestical calculation of rode affilicital structures indices in and seismic resistant bridges 125 30 15 1 1 11 11 11 11 11 11 11 11 11 11 11 11 11 113 7 AAC45201G1 Reinforced concrete large span bridges 175 30 15 15 1 1 113 8 AAC45301G1 Modern methods of construction their survey-testing 175 30 15 30 1 1 113 113 1 AAC45101G1 System approach for choosing the location of artificial structures 100 30 30 1 1 1 88 2 AAC43001G1 Risk Investment Project Risks and Environmental and Social Impact Assessment 150 30 30 30 1 1 18 18 18 18 18 1 1 18 1 18 1 1 18 1 11 18 18 1 11 18 11 11 18 11 13 18 11 13 11 </td <td></td> <td>A A C 90701G1</td> <td>Coloulation of road artificial structures</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		A A C 90701G1	Coloulation of road artificial structures									
AAC43201G1 Reinforced concrete large span bridges 175 30 15 15 15 1 1 113 AAC43201G1 Aarc4301G1 Large span steel bridges 175 30 15 15 15 1 1 113 AAC4301G1 Modern methods of construction thebig-spanbridges and their survey- testing 175 30 15 10 10 30 1 1 113 AAC45101G1 System approach for choosing the location of artificial structures 100 30 30 1 1 1 88 AAC43001G1 Risk Investment Project Risks and Environmental and Social Impact 150 30 30 30 1 1 1 88 AAC43001G1 Calculation the Railroad Track for strength and stability 250 30 30 30 1 1 1 130 1 1 130 1 1 130 1 1 130 1 1 130 1 1 130 1 1 130 1 1 130 1 1 130 1 1 1	6	1010000101	Calculation of road artificial structures	125	30		15			1	1	78
Accase Accase Is		A A C 45 201 C 1	and seismic resistant bridges	1.75			15		15	1	1	110
8 AAC44301G1 Large span steel bridges 175 30 15 15 1 1 113 9 AAC43301G1 Modern methods of construction thebig-spanbridges and their survey- testing 175 30 1 10 30 1 1 113 1 AAC4301G1 System approach for choosing the location of artificial structures 100 30 2 1 1 1 68 2 AAC43301G1 Risk Investment Project Risks and Environmental and Social Impact 150 30 30 30 15 1 1 88 3 AAC43901G1 Calculation the Railroad Track for strength and stability 200 15 2.5 30 30 10 1 1 130.5 4 AAC43901G1 Interaction Between the Railway and Rolling Stock 150 30 30 30 10 1 1 188 1 1 1 188 1 1 1 130.5 4 AAC43301G1 Interaction Between the Railway and complex condition 150 30 30 30 1 1 1	/	AAC49201G1	Reinforced concrete large span bridges	1/5	30		15		15	1	1	113
AAC4330141 Modern methods of construction thebig-spanbridges and their survey- training testing 175 30 30 1 1 113 Image: testing Image: testing <thimage: testing<="" th=""> Image: testing</thimage:>	8	AAC44801G1	Large span steel bridges	175	30		15		15	1	1	113
9 the big-spanbridges and their survey- testing 175 30 30 1 1 113 1 AAC45101G1 System approach for choosing the location of artificial structures 100 30 30 1 1 1 68 AAC4501G1 Risk Investment Project Risks and Environmental and Social Impact Assessment 150 30 30 30 15 1 1 173 3 AAC4301G1 Calculation the Railroad Track for strength and stability 250 30 30 30 15 1 1 173 4 AAC4301G1 Interaction Between the Railway and Rolling Stock 150 30 30 30 1 1 1 130 6 AAC4301G1 Expressway and Specialized Railways 200 15 22.5 30 1 1 1 188 7 AAC4301G1 Rodernization and Strengthening of complex condition 150 30 30 30 1 1 1 88 7 AAC4301G1 Railway construction in difficult conditions 150 30 30 30 37.5		AAC4530IGI	Modern methods of construction									
iesting	9		thebig-spanbridges and their survey-	175	30				30	1	1	113
1 AC430101 System approach for choosing the location of artificial structures 100 3			testing									
10 AAC45101G1 System approach for choosing the location of artificial structures 100 30 2 2 2 1 1 1 68 2 AAC43501G1 Risk Investment Project Risks and Environmental and Social Impact Assessment 150 30 30 30 30 15 1 1 188 3 AAC43901G1 Calculation the Railroad Track for strength and stability 250 30 30 30 15 1 1 13 13 4 AAC43901G1 Calculation the Railroad Track for strength and stability 200 15 22.5 30 1 1 13												
1 AAC45101G1 location of artificial structures 100 30 1 1 1 68 2 AAC43501G1 Environmental and Social Impact Assessment 150 30 30 1 1 1 88 3 AAC43901G1 Environmental and Social Impact Assessment 150 30 30 1 15 1 1 173 3 AAC43901G1 Environmental and Social Impact Strength and stability 150 30 30 30 15 1 1 173 4 AAC43901G1 Environmental and Social Impact Strength and stability 150 30 30 30 1 1 13 13 4 AAC43401G1 Environmental and Social Impact Environmental and Social Impact Strength and stability 150 30 30 1 1 13 14 14 14 14 14 14 14 14 15 15 10 10 15 15 16 10 10 10 15 15 10 10 10 16 16 16 11 11 16 16			10)								
1 AAC45101G1 System approach for choosing the location of artificial structures 100 30 - - - - 1 1 68 2 AAC43501G1 Risk Investment Project Risks and Environmental and Social Impact - 30 30 - - - - 1 1 88 3 AAC43901G1 Calculation the Railroad Track for strength and stability 250 30 30 - 10 15 1 1 173 4 AAC43301G1 Interaction Between the Railway and Rolling Stock 200 15 22,5 30 - 1 1 1 18 88 5 AAC43301G1 Expressway and Specialized Railways 200 15 22,5 30 - 1 1 18 88 6 AAC43801G1 Providing of Tran traffic safety in complex condition 150 30 30 30 1 1 1 88 7 AAC43801G1 Modernization and Strengthening of Existing Railways 150 30 30 30 1 1 1 88		1							1	1		
1 Image: Section of artificial structures 100 </td <td>1</td> <td>AAC45101G1</td> <td>System approach for choosing the</td> <td>100</td> <td>30</td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> <td>68</td>	1	AAC45101G1	System approach for choosing the	100	30					1	1	68
AAC43501G1 Risk Investment Project Risks and Environmental and Social Impact Assessment 150 30 30 20 11 1 88 3 AC43901G1 Calculation the Railroad Track for strength and stability 200 20 30 30 30 30 150 10 11 11 13 4 AC43401G1 Interaction Between the Railway and Rolling Stock 150 200 15 22.5 30 0 0 1 10 130.5 5 AAC43001G1 Interaction Between the Railway and Rolling Stock 200 15 22.5 30 0 0 1 10 130.5 6 AAC43001G1 Providing of Tran traffic safety in complex condition 150 30 30 30 30 11 11 88 7 AAC4301G1 Modernization and Strengthening of Existing Railways 150 30 30 30 11 1 88 8 AAC43701G1 Railway construction in difficult conditions 150 30 30 30 11 1 10 130.5	1		location of artificial structures	100	50					1	1	
2 Environmental and Social Impact Assessment 150 30 30 10 11 11 13 88 3 AAC43901G1 Calculation the Railroad Track for strength and stability 250 30 30 30 15 10 11 173 4 AAC43401G1 Rolling Stock Interaction Between the Railway and Rolling Stock 100 1		AAC43501G1	Risk Investment Project Risks and									
Assessment Image: Constraint of the series of the seri	2		Environmental and Social Impact	150	30	30				1	1	88
AAC43901G1 strength and stability25030303015111113AAC43401G1 Rolling StockInteraction Between the Railway and Rolling Stock150303030301010111305AAC43301G1 Complex conditionExpressway and Specialized Railways2001522.530101011130.56AAC43801G1 Complex conditionProviding of Tran traffic safety in complex condition150303030101011130.57AAC44001G1 Existing RailwaysModernization and Strengthening of Existing Railways150303030101111889AAC4301G1 ConditionsTrack monitoring and assessment of the status of rail faults1251530101011130.51AAC84201G1 Protection of Structures125153030101111130.53AAC44301G1 ConditionsTechnical diagnosis and restoration of building structures125153030101111130.51AAC84301G1 Protection of Structures12515303010101111130.53AAC84301G1 Protection of Structures12515303010101113130.51AAC84301G1 Protection of Structures12515303010101			Assessment									
3 strength and stability 20 30 30 10 11 <t< td=""><td>2</td><td>AAC43901G1</td><td>Calculation the Railroad Track for</td><td>250</td><td>20</td><td></td><td>20</td><td></td><td>15</td><td>1</td><td>1</td><td>172</td></t<>	2	AAC43901G1	Calculation the Railroad Track for	250	20		20		15	1	1	172
A A C43401G1 Rolling StockInteraction Between the Railway and Rolling Stock15030303011111305AAC43301G1 Complex conditionExpressway and Specialized Railways2001522,53011130,56AAC43801G1 Complex conditionProviding of Tran traffic safety in complex condition150303030111130,57AAC44001G1 Existing RailwaysModernization and Strengthening of Existing Railways15030303011114888AAC43701G1 conditionsRailway construction in difficult conditions15030303011114889AAC43601G1 conditionsTrack monitoring and assessment of the status of rail faults12515303011110,51AAC84201G1 Protection of Structures1251530301113,53AAC4301G1 conditionsTechnical diagnosis1251530111413,51AAC84301G1 Protection of Structures1251530111783AAC4401G1 conditionsCauses, inspections and restoration of building structures17530301111784AAC8401G1 Protection of Structures1551530301111113<	5		strength and stability	230	50		50		15	1	1	175
4 Rolling Stock 150 30 30 30 30 1 1 10 88 5 AAC43301G1 Expressway and Specialized Railways 200 15 22,5 30 1 1 10,5 6 AAC43801G1 Providing of Tran traffic safety in complex condition 150 30 30 30 1 1 1 88 7 AAC44001G1 Modernization and Strengthening of Existing Railways 150 30 30 30 1 1 1 88 8 AAC43701G1 Railway construction in difficult conditions 150 30 30 30 1 1 1 88 9 AAC43601G1 Track monitoring and assessment of the status of rail faults 200 30 37,5 1 1 1 130,5 1 AAC43601G1 Technical diagnosis 125 15 30 1 1 1 130,5 2 AAC43601G1 Technical diagnosis 125 15 30 1 1 1 78 2 AAC43301G		AAC43401G1	Interaction Between the Railway and	150	20		20			1	1	00
5 AAC43301G1 Expressway and Specialized Railways 200 15 22,5 30 Image: Constraint of the complex condition in the complex condition in the complex condition 150 30 201 30 Image: Constraint of the complex condition in the complex condition in the complex condition in the conditions 150 30 30 30 Image: Constraint of the complex condition in the complex condition in the conditions 150 30 30 Image: Constraint of the complex condition in the conditions 150 30 30 Image: Constraint of the complex conditions 1m/minicipii for the complex	4		Rolling Stock	150	30		30			1	1	88
AAC43801G1 Providing of Tran traffic safety in complex condition 150 30 30 1 1 1 88 7 AAC44001G1 Modernization and Strengthening of Existing Railways 150 30 30 30 1 1 1 88 8 AAC43701G1 Railway construction in difficult conditions 150 30 30 30 1 1 1 88 9 AAC43601G1 Railway construction in difficult conditions 150 30 30 30 1 1 1 88 9 AAC43601G1 Track monitoring and assessment of the status of rail faults 200 30 37,5 1 1 1 130,5 1 AAC84201G1 Technical diagnosis 125 15 30 1 1 1 78 2 AAC84301G1 Active and Passive Systems for Protection of Structures 125 15 30 1 1 1 78 3 AAC84401G1 Causes, inspections and restoration of building structures 175 30 30 1 1 1 11	5	AAC43301G1	Expressway and Specialized Railways	200	15	22,5	30			1	1	130,5
6 and complex condition 150 30 30 30 11 11 88 7 AAC44001G1 Existing Railways Modernization and Strengthening of Existing Railways 150 30 30 30 11 11 88 8 AAC43001G1 Conditions Railway construction in difficult conditions 150 30 30 30 11 11 88 9 AAC43601G1 Conditions Track monitoring and assessment of the status of rail faults 200 30 30 37,5 11 11 130,5 1 AAC84201G1 AAC84301G1 Active and Passive Systems for Protection of Structures 125 15 30 30 1 1 78 3 AAC84401G1 Building structures Causes, inspections and restoration of building structures 175 30 30 1 1 78 78 4 AAC84501G1 Non-infringing Control Methods 225 45 30 30 1 1 11 78 1 AAC84501G1 Non-infringing Control Methods 225 45 30 30 1 1 11 <th< td=""><td></td><td>AAC43801G1</td><td>Providing of Tran traffic safety in</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>		AAC43801G1	Providing of Tran traffic safety in									
AAC44001G1 Existing RailwaysModernization and Strengthening of Existing Railways1503030303011888AAC43701G1 conditionsRailway construction in difficult conditions1503030303011889AAC43601G1 status of rail faultsTrack monitoring and assessment of the status of rail faults2003037,5111130,51AAC84201G1 Protection of StructuresTechnical diagnosis1251530111783AAC84401G1 Protection of Structures1251530111783AAC84501G1 Protection of Structures17530301111114AAC84501G1Non-infringing Control Methods2254522,511115,5	6		complex condition	150	30		30			1	1	88
7 Action and a construction of a second and a second a s		AAC44001G1	Modernization and Strengthening of	150								
AAC43701G1 Railway construction in difficult conditions 150 30 30 30 11 1 88 9 AAC43601G1 Track monitoring and assessment of the status of rail faults 200 30 37,5 1 1 1 130,5 1 AAC43601G1 Track monitoring and assessment of the status of rail faults 200 30 37,5 1 1 1 130,5 1 AAC4301G1 Technical diagnosis 125 15 30 1 1 1 78 2 AAC84201G1 Technical diagnosis 125 15 30 1 1 1 78 2 AAC84301G1 Active and Passive Systems for Protection of Structures 125 15 30 1 1 1 78 3 AAC84401G1 Causes, inspections and restoration of building structures 175 30 30 1 1 1 11 13 4 AAC84501G1 Non-infringing Control Methods 225 45 22,5 1 1 1 15,5 <td>7</td> <td></td> <td>Existing Railways</td> <td></td> <td>30</td> <td></td> <td>30</td> <td></td> <td></td> <td>1</td> <td>1</td> <td>88</td>	7		Existing Railways		30		30			1	1	88
8 and they conditions 30 30 30 1 1 88 9 AAC43601G1 Track monitoring and assessment of the status of rail faults 200 30 37,5 1 1 1 130,5 1 AAC43601G1 Track monitoring and assessment of the status of rail faults 200 30 37,5 1 1 1 130,5 1 AAC43601G1 Technical diagnosis 125 15 30 1 1 1 78 2 AAC84301G1 Active and Passive Systems for Protection of Structures 125 15 30 1 1 1 78 3 AAC84401G1 Causes, inspections and restoration of building structures 175 30 30 1 1 1 113 4 AAC84501G1 Non-infringing Control Methods 225 45 22,5 1 1 1 155,5		AAC43701G1	Bailway construction in difficult	150								
AAC43601G1Track monitoring and assessment of the status of rail faults2003037,5I11130,51AAC84201G1Technical diagnosis1251530I11782AAC84301G1Active and Passive Systems for Protection of Structures1251530I11783AAC84401G1Causes, inspections and restoration of building structures1753030I11134AAC84501G1Non-infringing Control Methods2254522,5III115,5	8		conditions		30		30			1	1	88
911 area monitoring and assessment of the status of rail faults2003037,5111130,5111130,5111130,5111130,5111130,5111130,5111130,5111130,5111130,5111251530111211125153011121125153030111133115,530303011115,541155,5151515151616161115,5		AAC43601G1	Track monitoring and assessment of the									
Indication of fair latticeIndication <thindication< th="">IndicationI</thindication<>	9		status of rail faults	200	30		37,5			1	1	130,5
111AAC84201G1Technical diagnosis1251530I1782AAC84301G1Active and Passive Systems for Protection of Structures1251530I1783AAC84401G1Causes, inspections and restoration of building structures1753030I11134AAC84501G1Non-infringing Control Methods2254522,5II115,5			status of fall faults									
1AAC84201G1Technical diagnosis125153011782AAC84301G1Active and Passive Systems for Protection of Structures1251530111783AAC84401G1Causes, inspections and restoration of building structures1753030111134AAC84501G1Non-infringing Control Methods2254522,5111155,5			11	1								
1AAC84201G1Technical diagnosis1251530I1782AAC84301G1Active and Passive Systems for Protection of Structures1251530II1783AAC84401G1Causes, inspections and restoration of building structures1753030II111134AAC84501G1Non-infringing Control Methods2254522,5III15,5			11	L								
AAAC84301G1 Protection of StructuresActive and Passive Systems for Protection of Structures125153011783AAC84401G1 building structuresCauses, inspections and restoration of building structures17530301111134AAC84501G1 Non-infringing Control Methods2254522,5111155,5	1	AAC84201G1	Technical diagnosis	125	15		30			1	1	78
2Information Active and Fassive systems for Protection of Structures125153011783AAC84401G1 building structuresCauses, inspections and restoration of building structures17530301111134AAC84501G1 Non-infringing Control Methods2254522,5111155,5	1	A A C 84301G1	Active and Dessive Systems for	125	15		50			1	1	70
AAC84401G1 building structuresCauses, inspections and restoration of building structures1753030111134AAC84501G1 Non-infringing Control Methods2254522,5111155,5	2		Protection of Structures	125	15		30			1	1	78
3AncoursesCauses, inspections and restoration of building structures1753030111134AAC84501G1Non-infringing Control Methods2254522,511155,5		A A C84401C1	Causes inspections and restautions									
4AAC84501G1Non-infringing Control Methods2254522,511155,5	3	10100110101	Causes, inspections and restoration of	175	30		30			1	1	113
4 Preserver infininging Control Methods 225 45 22,5 1 1 155,5		A A C 8/1501 C 1	Non-infringing Control Mathe	225	45		<u></u>			1	1	155 5
	4		non-miringing Control Methods	223	43		22,5			1	1	155,5

	A A C84601G1	The Technikel Disgnastics of										1
5	10100400101	Construction Domise	225	30		22,5	15			1	1	155,5
	A A C 9 4701 C 1	Construction Danige	105	1 -							-	=0
6	AAC04701G1	Mechanics of Rupture	125	15		30				1	1	78
7	AAC84801G1	Building technical exspertize	250	30		30			15	1	1	173
8	AAC84901G1	Construction Special Constructions	125	15		15			15	1	1	78
9	AAC85001G1	Reconstruction of building-masked	125	15		15			15	1	1	78
		frames of building-structures		10		10						
	12											
1	AAC87201G1	Software Package of Mathematical Models of Computational Processes	125	15		30				1	1	78
2	AAC87301G1	Construction Economics	125	15	30					1	1	78
	AAC30801G1	Monolithic building-building										
3		technology	175	15	15	30				1	1	113
4	EET80301G1	Concrete sciences	225	30		37.5				1	1	155 5
	FFT80401G1	Excilition of huilding materials	225	50		57,5				1	1	155,5
5		manufactures	125	30		15				1	1	78
6	AAC87701G1	Construction Special Constructions	125	15		15			15	1	1	78
7	AAC87801G1	Moderm methods of building materials physical and mechanical properties	125	15	15		15			1	1	78
8	AAC88001G1	Construction Materials research and	125	15	15		15			1	1	78
	EET80501G1	Building materials substrances fillers										
9	LEIGOSUIGI	and items	225	30			37,5			1	1	155,5
	EET90601C1											
10	EE100001G1	Desingn for enterprise of building	125	20					15	1	1	70
10		materials	123	50					15	1	1	/0
		materials 13	3	50					15		1	78
10	AAC89301G1	materials 13 Special courseof Building Physics	250	45		30			15	1	1	173
10	AAC89301G1 AAC01801G1	materials 13 Special courseof Building Physics Heating	250 150	30 45 30		30 30			13	1 1 1 1	1	173 88
10 1 2 3	AAC89301G1 AAC01801G1 AAC89401G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation.	250 150 150	30 45 30 30		30 30 30				1 1 1 1	1 1 1 1	173 88 88
10 1 2 3 4	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1	materials 13 Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply	250 150 150	30 45 30 30 30		30 30 30 30				1 1 1 1 1	1 1 1 1	173 88 88 88
10 1 2 3 4 5	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC89501G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply	250 150 150 150 250	45 30 30 30 30		30 30 30 30 30			15	1 1 1 1 1	1 1 1 1 1	173 88 88 88 88 173
10 1 2 3 4 5 6	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving	250 150 150 250 250	45 30 30 30 30 30 30		30 30 30 30 30 30 45			15	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1	173 88 88 173 173
10 1 2 3 4 5 6 7	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1 AAC02101G1	materials 13 Special course of Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving Buildings Microclimate Automatic Control Systems	250 150 150 250 250 150	45 30 30 30 30 30 30 30		30 30 30 30 30 45 30			15	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	173 88 88 88 173 173 88
10 1 1 2 3 3 4 5 6 7 7 8	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1 AAC02101G1 AAC02101G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving Buildings Microclimate Automatic Control Systems Non-traditional Renewable Energy Technologies inCivil Engineering	250 150 150 250 250 150 150	45 30 30 30 30 30 30 30 30 30		30 30 30 30 30 45 30 30			15	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1	173 88 88 88 173 173 88 88 88
10 1 2 3 3 4 5 6 7 7 8	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1 AAC02101G1 AAC02101G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving Buildings Microclimate Automatic Control Systems Non-traditional Renewable Energy Technologies inCivil Engineering 14	250 150 150 250 250 150 150	45 30 30 30 30 30 30 30 30		30 30 30 30 30 45 30 30			15	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	173 88 88 173 173 88 88 88 88 88
10 1 2 3 4 5 6 7 7 8 8 1	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1 AAC02101G1 AAC89601G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving Buildings Microclimate Automatic Control Systems Non-traditional Renewable Energy Technologies inCivil Engineering System approach for choosing the location of artificial structures	250 150 150 250 250 150 150 150	45 30 30 30 30 30 30 30 30 30		30 30 30 30 45 30 30 30			15		1 1 1 1 1 1 1 1	173 88 88 173 173 88 88 68
10 1 2 3 4 5 6 7 7 8 8 1 1 2	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1 AAC02101G1 AAC02101G1 AAC45101G1 AAC43501G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving Buildings Microclimate Automatic Control Systems Non-traditional Renewable Energy Technologies inCivil Engineering System approach for choosing the location of artificial structures Risk Investment Project Risks and Environmental and Social Impact Accessment	250 150 150 250 250 250 150 150 150	45 30 30 30 30 30 30 30 30 30 30 30	30	30 30 30 30 45 30 30 30			15		1 1 1 1 1 1 1 1 1 1 1	173 88 88 173 173 88 88 68 88
10 1 2 3 3 4 5 6 7 7 8 8 1 1 2 2	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1 AAC02101G1 AAC89601G1 AAC45101G1 AAC43501G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving Buildings Microclimate Automatic Control Systems Non-traditional Renewable Energy Technologies inCivil Engineering 14 System approach for choosing the location of artificial structures Risk Investment Project Risks and Environmental and Social Impact Assessment Transport Knots and environmental	250 150 150 250 250 150 150 150 150 150	45 30 30 30 30 30 30 30 30 30 30 30 30	30	30 30 30 30 45 30 30 30			15			173 88 88 88 173 173 88 88 88 88 88 88 88
10 1 1 2 3 4 5 6 7 8 1 1 2 3 3	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1 AAC02101G1 AAC02101G1 AAC45101G1 AAC45101G1 AAC44501G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving Buildings Microclimate Automatic Control Systems Non-traditional Renewable Energy Technologies inCivil Engineering System approach for choosing the location of artificial structures Risk Investment Project Risks and Environmental and Social Impact Assessment Transport Knots and expressways	250 150 150 250 250 150 150 150 150 150 150	45 30 30 30 30 30 30 30 30 30 30 30	30	30 30 30 30 45 30 30 30			15		1 1 1 1 1 1 1 1 1 1 1 1	173 88 88 173 173 88 88 88 88 88 88 88 88 130,5
10 1 2 3 4 5 6 7 8 7 8 1 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1	AAC89301G1 AAC01801G1 AAC89401G1 AAC89501G1 AAC01901G1 AAC02001G1 AAC02101G1 AAC02101G1 AAC45101G1 AAC45101G1 AAC44501G1 AAC44701G1	materials Special courseof Building Physics Heating Special Course of Aerodynamics and Ventilation. Air-conditioning and Smooth Supply Special Course of Gas Supply Buildings Energy Efficiency and Energy Saving Buildings Microclimate Automatic Control Systems Non-traditional Renewable Energy Technologies inCivil Engineering System approach for choosing the location of artificial structures Risk Investment Project Risks and Environmental and Social Impact Assessment Transport Knots and expressways Road Conditions and Traffic Safety	250 150 150 250 250 150 150 150 150 150 200 150	45 30 30 30 30 30 30 30 30 30 30 30 30 30	30	30 30 30 30 45 30 30 30 30			15		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	173 88 88 173 173 88 88 68 130,5 88

		1	1										
4	AAC44401G1	Road construction technology and	150	20	20			1	1	00			
0		conditions		30	30			1	1	88			
7	AAC44601G1	RoadRehabilitationandModernization	150	30	30			1	1	88			
8	AAC44201G1	Landslide activiti on motor roads	150	30	30			1	1	88			
9	AAC44101G1	Surface of Roadend Aerodromes	200	30	22,5		15	1	1	130,5			
					·		· ·						
	15												
		Construction of Gas Supply Networks											
1	AAC89101G1	Rehabilitation and Reconstruction	250	30	30		15	1	1	173			
	AAC89701G1	Gas Chemistry, Gas Combustion,	225	20	22.5	15		1	1	155 5			
2		Combustion Kinetics	225	30	22,5	15		1	1	155,5			
3	AAC89801G1	Gas Heating, Hot Water Preparing and	250	45	30			1	1	173			
		Alternative Sources.	250	-13				1	1	175			
4		Vehicle Gas filling stations	125					1	1	78			
5		Gas pipelines and Gas Storages	125					1	1	78			
6	AAC89401G1	Special Course of Aerodynamics and Ventilation.	175	30	30			1	1	113			
7		Special Course of Engineering	175	30	30			1	1	113			
	AAC02201G1	Thermodynamics	175	50	50			1	1	115			
8	AAC89901G1	Dimensional and Regulatory Equipment Using in Gas Facitities	175	30	30			1	1	113			
		10	5										
1	EET72601G1	The Theorits of Plasticity and creep	250	30	30		15	1	1	173			
2	AAC85101G1	Discrete Methods of Construction	125	15	15		15	1	1	78			
		Mechanics	125	15	15		15		1	70			
3	AAC85201G1	Mechanics of the Flat and Spatial	250	30	30		15	1	1	78			
		Systems					15	-	-	10			
4	AAC85301G1	The Theory of Structures	250	30	30		15	1	1	173			
5	EET72301G1	Elasticity Theory	250	30	30		15	1	1	173			
6	AAC84701G1	Mechanics of Rupture	125	15	30			1	1	78			
7	MAS36001G1	Mechanics of absolutely rigid body	125	15	30			1	1	78			
8	AAC85501G1	Construction Special Constructions	125	15	15		15	1	1	78			

Program Supervisor

Faculty of Civil Engineering Head of Quality Assurance Service

Dean of the Faculty

Agreed with Quality Assurance Service of GTU

Modified

Faculty of Civil Engineering At the meeting of Faculty Board Tamaz Khmelidze

Marina Javakhishvili

David Gurenidze

Irma inashvili

N 25 30.03.2018 Chairman of the Faculty Boar

David Gurgenidze