Annex 1

School of Informatics and Engineering (Faculty)

Bachelor Program in Construction

Study Plan

#	Subject code	Training components	Access Prerequisite	Study semester	ECTS Credits	Hours		
						Contact	Independent	Total
	Training Components (240 credits)							
	University Training Courses - 32 credits							
1	NS&E 201	Calculus	No	I	4	34	66	100
2	NS&EC 302	Fundamentals of Information Technology	No	I	4	34	66	100
3	NS&E 203	Discrete Mathematics	NS&E 201	II	4	34	66	100
4	NS&E 204	General Physics	No	II	4	34	66	100
5	NS&E 101	Technical English I	B1	I	4	34	66	100
6	NS&E 102	Technical English II	NS&E 101	II	4	34	66	100
7	NS&E 103	Technical English III	NS&E 102	III	4	34	66	100
8	NS&E 104	Technical English VI	NS&E 103	IV	4	34	66	100
	Main specialty Teaching plan- 174 credits							
1	NS&EB 101	Introduction to Specialty: Residential and Industrial Buildings	No	I	4	34	66	100
2	NS&EB 413	Technical drawing	No	I	4	34	66	100
3	NS&EC 401	Computer Engineering Graphics I (AutoCad)	No	I	4	34	66	100
4	NS&EB 401	Materials Science: Modern building materials and products	No	I	6	51	99	150

5	NS&EB 301	Engineering Technique Foundations-Building Parts	No	II	6	51	99	150
6	NS&EB 414	Construction drawing	NS&EB 413	II	4	34	66	100
7	NS&EC 415	Computer Engineering Quality II (ArchiCad)	NS&EC 401	II	4	34	66	100
8	NS&EB 409	Labor protection	No	II	4	34	66	100
9	NS&EB 601	Foundations of Building Design	NS&EB 101	III	4	34	66	100
10	NS&EB 504	Engineering Geology	No	III	4	34	66	100
11	NS&EB 304	Engineering Geodesy	NS&E 203 NS&E 204 NS&EB 414	III	4	34	66	100
12	NS&EB 215	Abstract Mechanics	NS&E 203	III	4	34	66	100
13	NS&EB 404	Durability of Materials	NS&EB 301 NS&EB 401 NS&E 203	III	4	34	66	100
14	NS&EB 602	Design of Buildings	NS&EB 601	IV	4	34	66	100
15	NS&EB 303	Reinforced Concrete Structures	NS&EB 215 NS&EB 404 NS&EB 401 NS&EB 301 NS&EC 401 NS&EB 414	IV	6	51	99	150
16	NS&EB 403	Soil Mechanics and Rootstocks	NS&EB 504	IV	4	34	66	100
17	NS&EB 405	Construction Mechanics and Seismic Resistance	NS&E 203	IV	4	34	66	100
18	NS&EB 502	Engineering Equipment: Heat supply, Ventilation	No	IV	4	34	66	100
19	NS&EB 407	Construction Machinery and Mechanisms	No	IV	4	34	66	100
20	NS&EB 701	Reinforced Concrete and Stone Structures	NS&EB 303	V	6	51	99	150
21	NS&EB 801	Computer Modeling of Building Structures	NS&E 203 NS&EB 303 NS&EB 405	V	4	34	66	100

22	NS&EB 802	Construction Production Organization, Planning and Management	NS&EB 408	V	6	51	99	150
23	NS&EB 702	Building Monitoring and Technical Expertise	NS&EC 303	V	6	51	99	150
24	NS&EB 501	Engineering Equipment: water supply and Sanitation	No	V	4	34	66	100
25	NS&EB 503	Building Economics	NS&EB 301	VI	4	34	66	100
26	NS&EB 703	Constructions of Steel Aluminum and light alloys	NS&EB 701	VI	6	51	99	150
27	NS&EB 804	Calculation of Buildings by modern methods	NS&EB 801 NS&EB 701	VI	4	34	66	100
28	NS&EB 506	Special purpose Buildings	No	VI	6	51	99	150
29	NS&EB 411	Restoration of Buildings	NS&EB 411 NS&EB 804 NS&EB 703 NS&EB 701	VI	6	51	99	150
30	NS&EB 805	Georgian Building Code	NS&EB 701	VI	4	34	66	100
31	NS&EB 410	Carpentry and Plastic Constructions	NS&EB 703	VII	4	34	66	100
32	NS&EB 704	Construction Euronorms	No	VII	4	34	66	100
33	NS&EB 705	Steel Constructions	NS&EB 703	VII	4	34	66	100
34	NS&EB 803	Building Management	NS&EB 802	VII	4	34	66	100
35	NS&EB 408	Building Production Methods	NS&EB 303 NS&EB 407	VII	6	51	99	150
36	NS&EB 508	Electrotechnical Systems	NS&E 204	VII	4	34	66	100
37	NS&EB 406	Modern Obsolote Constructions	NS&EB 705	VIII	6	51	99	150
38	NS&EB 402	Face-work, Thermal insulation and Sound insulation materials	NS&EB 401 NS&EB 409	VIII	4	34	66	100
	Practical component - 9 credits							
1	NS&EB 302	Introductory Practice	NS&EB 409	III	6	51	99	150

			NS&EB 410 NS&EB 702					
2	NS&EB 706	Undergraduation Internship	No	VII	4	34	66	100
	Research component - 18 credits							
1	NS&EB 901	Bachelor Thesis - Project	210 Credit	VIII	16	51	349	400
	Free Optional component -12 credits							
1	LIB 010	Logic	No	V	4	34	66	100
2	LIB 004	History of Georgia in the context of world history	No	V	4	34	66	100
3	NS&EB 507	Eco-friendly and energy efficient construction	No	V	4	34	66	100
4	LIB 008	World Art Masterpieces	No	V	4	34	66	100
5	NS&EB 102	Fundamentals of Urbanism	No	V	4	34	66	100
6	GEO 002	Speech Culture: Presentation Skills	No	VI	4	34	66	100
7	NS&EB 807	Basics of Automated Building Design System (CADsystem)	No	VI	4	34	66	100
8	LIB 101	Philosophy problems	No	VI	4	34	66	100
9	NS&E 202	Applied Statistics	No	VIII	4	34	66	100
10	NS&EC 208	Social Psychology	No	VIII	4	34	66	100
11	NS&EB 509	Technical supervision over construction	No	VIII	4	34	66	100

Warning: Selection of free components (12 credits) takes place in the 5th and 8th semesters.

In the 5th semester, a student can select one course of 4 credits;

In the 8th semester, a student can select one course of 4 credits.

Map of goals and results

#	Program Goals	Program Result
1	Prepare a Bachelor of Civil Engineering focused on construction-design activities, who with solid basic knowledge and transfer skills will be able to orient in a dynamically changing environment and compete in the international market with foreign specialists of similar profile.	Describes the main features and principles of modern construction methods, some of the latest methods of building design and construction processes, modern methods of building engineering equipment and energy efficiency.
2	To prepare a qualified, competitive, highly morally qualified specialist in accordance with modern requirements for a decent career, who will be motivated to achieve more from a professional point of view.	Describes the complex issues of the field (design, production of construction materials and goods, organization of construction production and its commissioning). Evaluates one's own and others' capabilities, effectively manages time and resources by planning and implementing continuous professional development.
3.	To study the principles, methods and mechanisms of fulfillment of the main tasks of the construction-design activity in compliance with the current construction norms and rules, using modern technologies.	Explains the importance of physical-mechanical properties of building materials and goods; Methods of calculating building structures; Rules for the use of information technology and computer design issues in construction; Construction norms and rules in force in Georgia; Principles of application of Euronorms; Key issues in economics and management.
4.	To study the rules and methods of purposeful, safe use of construction materials, goods and machinery in the construction.	Explains the importance of physical-mechanical properties of building materials and goods; Methods of calculating building structures; Rules for the use of information technology and computer design issues in construction; Construction norms and rules in force in Georgia; Principles of application of Euronorms; Key issues in economics and management. Explains the importance of occupational safety in the field of construction

		and the issues of professional responsibility of a specialist in the field.
5.	To study the rules of rational organization and management of construction, ways and conditions for solving problems related to the field in a substantiated and reliable manner, based on an understanding of the risk factors arising in construction.	Identifies hazards in the work environment, identifies risks and develops preventive measures to rationally organize and manage construction.
6	Develop the ability to make connections between the formation of architectural forms and constructive thinking, and to present the results obtained to specialists and non-specialists.	Executes a project of a practical nature based on the solutions of construction schemes. Finds information on modern materials, technologies, machines and mechanisms in the field of construction in the native and foreign languages and draws conclusions taking into account the ethical principles characteristic of the construction profession. Takes into account the interest of specialists and non-specialists in presenting information, own arguments using construction terminology in written and oral form in a logical, consistent and clear manner; Has the ability to respond quickly and adequately, taking into account respect for different views; Effectively uses communication technologies.
7	To study the methods of selection and delineation of optimal construction schemes of civil and industrial buildings in compliance with Euronorms and norms in force in Georgia, as well as to carry out a practical project using modern computational programs.	Creates a research (bachelor) thesis according to pre-defined instructions. Continuously updates knowledge in the field of construction in accordance with labor safety and legislative changes in construction norms. Executes a project of a practical nature based on the solutions of construction schemes.
8	To study modern methods of engineering equipment and energy efficiency of buildings.	Describes the main features and principles of modern construction methods, some of the latest methods of building design and construction processes, modern methods of building engineering equipment and energy efficiency.

9	Develop the ability to act in accordance with the social and democratic values of human rights,	12. Recognizes the scope of the builder's work ethic, assumes social and moral responsibility, takes and implements initiative.

Map of learning outcomes

№	Code	Courses	1	2	3	4	5	6	7	8	9	10	11	12
1.	NS&E 201	Calculus												
2.	NS&EC 302	Fundamentals of Information Technology			*					*	*			
3.	NS&E 203	Discrete Mathematics												
4.	NS&E 204	General Physics												
5.	NS&E 101	Technical English I								*	*			
6.	NS&E 102	Technical English II								*	*			
7.	NS&E 103	Technical English III								*	*			
8.	NS&E 104	Technical English VI								*	*			
9.	NS&EB 101	Introduction to Specialty: Residential and Industrial Buildings												
10.	NS&EB413	Technical drawing					*							
11.	NS&EC 401	Computer Engineering Graphics I (AutoCad)			*				*	*	*			
12.	NS&EB 401	Materials Science: Modern building materials and products		*						*	*			
13.	NS&EB 301	Engineering Technique Foundations-Building Parts		*										
14.	NS&EB414	Construction drawing					*							
15.	NS&EC 415	Computer Engineering Quality II (ArchiCad)			*				*	*	*			
16.	NS&EB 409	Labor protection		*		*		*				*	*	*

17.	NS&EB 601	Foundations of Building Design		*										
18.	NS&EB 504	Engineering Geology						*	*					*
19.	NS&EB 304	Engineering Geodesy	*				*	*	*					
20.	NS&EB 215	Abstract Mechanics			*			*	*					
21.	NS&EB 404	Durability of Materials			*			*	*					
22.	NS&EB 602	Design of Buildings	*	*		*						*		
23.	NS&EB 303	Reinforced Concrete Structures	*	*	*		*							*
24.	NS&EB 403	Soil Mechanics and Rootstocks	*	*	*									
25.	NS&EB 405	Construction Mechanics and Seismic Resistance			*				*	*				
26.	NS&EB 502	Engineering Equipment: Heat supply, Ventilation	*	*		*						*		
27.	NS&EB 407	Construction Machinery and Mechanisms	*			*		*		*	*			
28.	NS&EB 701	Reinforced Concrete and Stone Structures	*	*	*		*							
29.	NS&EB 801	Computer Modeling of Building Structures	*	*	*		*							
30.	NS&EB 802	Construction Production Organization, Planning and Management	*	*		*					*			
31.	NS&EB 702	Building Monitoring and Technical Expertise		*	*			*			*			*
32.	NS&EB 501	Engineering Equipment: water supply and Sanitation	*	*		*		*						
33.	NS&EB 503	Building Economics		*	*									
34.	NS&EB 703	Constructions of Steel Aluminum and light alloys	*		*		*							
35.	NS&EB 804	Calculation of Buildings by modern methods	*	*	*									
36.	NS&EB 506	Special purpose Buildings	*	*	*									
37.	NS&EB 411	Restoration of Buildings	*	*	*	*	*							
38.	NS&EB 805	Georgian Building Code	*		*						*	*		
39.	NS&EB 410	Carpentry and Plastic	*	*	*						*	*		

		Constructions												
40.	NS&EB 704	Construction Euronorms			*						*	*		
41.	NS&EB 705	Steel Constructions	*				*							
42.	NS&EB 803	Building Management								*	*	*	*	*
43.	NS&EB 408	Building Production Methods	*			*	*	*		*	*	*		
44.	NS&EB508	Electrotechnical Systems								*	*			
45.	NS&EB 406	Modern Obsolote Constructions	*							*	*	*		
46.	NS&EB 402	Face-work, Thermal insulation and Sound insulation materials		*	*						*	*		
47.	NS&EB 302	Introductory Practice	*	*	*	*				*	*	*	*	*
48.	NS&EB 706	Undergraduation Internship	*	*	*			*		*	*	*	*	*
49.	NS&EB901	Bachelor Thesis - Project	*	*	*	*	*	*	*	*	*	*	*	*
50.	LIB 010	Logic												
51.	LIB 004	History of Georgia in the context of world history												
52.	NS&EB 507	Eco-friendly and energy efficient construction	*							*	*	*		
53.	LIB 008	World Art Masterpieces												
54.	NS&EB102	Fundamentals of Urbanism												
55.	GEO 002	Speech Culture: Presentation Skills												
56.	NS&EB 807	Basics of Automated Building Design System (CADsystem)												
57.	LIB 101	Philosophy problems												
58.	NS&E 202	Applied Statistics			*									
59.	NS&EC 208	Social Psychology												
60.	NS&EB 509	Technical supervision over construction		*	*	*		*			*	*		