Bachelor Program: Construction

Field of Studies: Production of building materials, products and structures

Years of Studies: 4

Language of Training: Russian

| **№** | **Subject** | **Semester** | **Hours** | **Credits** |
| --- | --- | --- | --- | --- |
| **B.1.1 Mandatory part of Block 1** | | | | |
| B.1.1.1 | History | 1-2 | /144 | /4 |
| B.1.1.1 | History | 1 | 72 | 2 |
| B.1.1.1 | History | 2 | 72 | 2 |
| B.1.1.2 | Philosophy | 6 | 108 | 3 |
| B.1.1.3 | Foreign language |  | /288 | /8 |
| B.1.1.3 | Foreign language | 1 | 108 | 3 |
| B.1.1.3 | Foreign language | 2 | 108 | 3 |
| B.1.1.3 | Foreign language | 3 | 72 | 2 |
| B.1.1.4 | Legal regulation of construction. corruption risks | 1 | 72 | 2 |
| B.1.1.5 | Psychology | 1 | 72 | 2 |
| B.1.1.6 | Business sector | 3 | 108 | 3 |
| B.1.1.7 | Maths | 1-2 | / 324 | /9 |
| B.1.1.7 | Maths | 1 | 180 | 5 |
| B.1.1.7 | Maths | 2 | 144 | 4 |
| B.1.1.8 | Information technology in construction | 1-2 | / 180 | /5 |
| B.1.1.8 | Information technology in construction | 1 | 72 | 2 |
| B.1.1.8 | Information technology in construction | 2 | 108 | 3 |
| B.1.1.9 | Engineering and computer graphics | 1-2 | / 216 | / 6 |
| B.1.1.9 | Engineering and computer graphics | 1 | 108 | 3 |
| B.1.1.9 | Engineering and computer graphics | 2 | 108 | 3 |
| B.1.1.10 | Chemistry | 1 | 108 | 3 |
| B.1.1.11 | Physics | 1-2 | / 180 | /5 |
| B.1.1.11 | Physics | 1 | 108 | 3 |
| B.1.1.11 | Physics | 2 | 72 | 2 |
| B.1.1.12 | Ecology | 5 | 72 | 2 |
| B.1.1.13 | Theoretical mechanics | 3 | 144 | 4 |
| B.1.1.14 | Fundamentals of Technical Mechanics | 3 | 144 | 4 |
| B.1.1.15 | Fundamentals of geotechnics | 5 | 108 | 3 |
| B.1.1.16 | The engineering geodesy | 2 | 108 | 3 |
| B.1.1.17 | Engineering geology | 1 | 72 | 2 |
| B.1.1.18 | Basics of the buildings architecture | 3 | 144 | 4 |
| B.1.1.19 | Basics of building structures | 4 | 108 | 3 |
| B.1.1.20 | Construction Materials | 2 | 144 | 4 |
| B.1.1.21 | Health and safety | 8 | 108 | 3 |
| B.1.1.22 | Metrology, standardization, certification and quality management | 5 | 108 | 3 |
| B.1.1.23 | Fundamentals of heat and ventilation | 4 | 108 | 3 |
| B.1.1.24 | Fundamentals of water and wastewater | 4 | 108 | 3 |
| B.1.1.25 | Electrical and electricity | 4 | 108 | 3 |
| B.1.1.26 | Technological processes in construction | 5 | 144 | 4 |
| B.1.1.27 | Fundamentals of organization and management in construction | 7 | 108 | 3 |
| B.1.1.28 | Fluid Mechanics | 3 | 72 | 2 |
| B.1.1.29 | Bases of technical operation of buildings and structures | 5 | 72 | 2 |
| B.1.1.30 | Physical Culture and sport | 1 | 72 | 2 |
|  | **TOTAL mandatory part** |  | **3852** | **107** |
| **B.1.2 The variable part of Block 1** | | | | |
| B.1.2.1 | Basics of BIM-technology | 3 | 72 | 2 |
| B.1.2.2 | Strength of materials | 3 | 144 | 4 |
| B.1.2.3 | Construction Materials | 3-4 | / 180 | /5 |
| B.1.2.3 | Construction Materials | 3 | 72 | 2 |
| B.1.2.3 | Construction Materials | 4 | 108 | 3 |
| B.1.2.4 | Processes and devices of building products technology | 3 | 144 | 4 |
| B.1.2.5 | Binders | 4-5 | / 396 | /11 |
| B.1.2.5 | Binders | 4 | 180 | 5 |
| B.1.2.5 | Binders | 5 | 216 | 6 |
| B.1.2.6 | Chemistry building | 5 | 180 | 5 |
| B.1.2.7 | Concrete technology, building products and constructions | 6-7 | / 324 | /9 |
| B.1.2.7 | Concrete technology, building products and constructions | 6 | 144 | 4 |
| B.1.2.7 | Concrete technology, building products and constructions | 7 | 180 | 5 |
| B.1.2.8 | Engineering equipment in the production of building materials | 8 | 108 | 3 |
| B.1.2.9 | Technological design of reinforced concrete structures prefabricated | 6 | 108 | 3 |
| B.1.2.10 | Mechanical equipment of construction industry | 7 | 108 | 3 |
| B.1.2.11 | The technology of insulating materials and products | 6 | 180 | 5 |
| B.1.2.12 | Advanced composite materials in construction | 7 | 108 | 3 |
| B.1.2.13 | Technology wall materials and products | 7 | 108 | 3 |
| **B.1.3** | **Electives** |  | **1660** | **37** |
| B.1.3.1.1 | Aggregates for concrete technology | 7 | 108 | 3 |
| B.1.3.1.2 | Building materials based on polymers | 7 | / 108 | / 3 |
| B.1.3.2.1 | Nanotechnology and Nanomaterials in Construction | 6 | 144 | 4 |
| B.1.3.2.2 | Physical chemistry of filled systems | 6 | / 144 | /4 |
| B.1.3.3.1 | Methods of study of building materials | 4 | 144 | 4 |
| B.1.3.3.2 | Physico-chemical mechanics of heterogeneous structures | 4 | / 144 | /4 |
| B.1.3.4.1 | Fundamentals of scientific and technical creativity in building materials | 5 | 144 | 4 |
| B.1.3.4.2 | Quality control in building materials | 5 | / 144 | /4 |
| B.1.3.5.1 | Technology of finishing materials | 6 | 180 | 5 |
| B.1.3.5.2 | Wall ceramics technology | 6 | / 180 | /5 |
| B.1.3.6.1 | The durability of building materials and products | 7 | 180 | 5 |
| B.1.3.6.2 | The durability of concrete and reinforced concrete | 7 | / 180 | /5 |
| B.1.3.7.1 | Technology products based on local raw material and man-made | 7 | 180 | 5 |
| B.1.3.7.2 | Modern materials | 7 | / 180 | /5 |
| B.1.3.8.1 | Designing of building products and constructions | 8 | 144 | 4 |
| B.1.3.8.2 | Technological complexes of enterprises of the construction industry | 8 | / 144 | /4 |
| B.1.3.9.1 | Organization of production and business management | 8 | 108 | 3 |
| B.1.3.9.2 | Quality management in the production of building materials | 8 | / 108 | / 3 |
| B.1.3.10.1 | Team sports | 2-6 | / 328 | 0 |
| B.1.3.10.1 | Team sports | 2 | 82 | 0 |
| B.1.3.10.1 | Team sports | 3 | 82 | 0 |
| B.1.3.10.1 | Team sports | 4 | 82 | 0 |
| B.1.3.10.1 | Team sports | 5 | 38 | 0 |
| B.1.3.10.1 | Team sports | 6 | 44 | 0 |
| B.1.3.10.2 | Physical Culture of Recuperation | 2-6 | / 328 | 0 |
| B.1.3.10.2 | Physical Culture of Recuperation | 2 | / 82 | 0 |
| B.1.3.10.2 | Physical Culture of Recuperation | 3 | / 82 | 0 |
| B.1.3.10.2 | Physical Culture of Recuperation | 4 | / 82 | 0 |
| B.1.3.10.2 | Physical Culture of Recuperation | 5 | / 38 | 0 |
| B.1.3.10.2 | Physical Culture of Recuperation | 6 | / 44 | 0 |
|  | **Total variable part** |  | **3820** | **97** |
|  | **Total unit B.1** |  | **7672** | **204** |
|  | **Block 2 Practice** |  | **1080** | **30** |
| **B.2.1** | **Mandatory part Block 2** |  | **108** | **3** |
| B.2.1.1 | Training (geodesic) Practice | 2 | 108 | 3 |
| **B.2.2** | **The variable part of the Block 2** |  | **972** | **27** |
| B.2.2.1 | Training (surveying) Practice | 2 | 108 | 3 |
| B.2.2.2 | Training (Trial) Practice | 4 | 216 | 6 |
| B.2.2.3 | Industrial (technological) Practice | 6 | 216 | 6 |
| B.2.2.4 | Production (design) practice | 8 | 108 | 3 |
| B.2.2.5 | Production (performing) practice | 8 | 108 | 3 |
| B.2.2.6 | Undergraduate practice | 8 | 216 | 6 |
| **B.3** | **State final examination** |  | **216** | **6** |
| B.3.1 | Preparations for the protection and sewn Graduation Qualification Work | 8 | 216 | 6 |
|  | **TOTAL direction** |  | **8968** | **240** |
| **F.** | **Elective** |  |  |  |
| F.2 | Modern ceramic building materials | 5 | 72 | 2 |
| F.3 | Building materials and technologies of technogenic raw materials | 5 | 72 | 2 |
| F.4 | Factors affecting the quality of building materials and products | 7 | 72 | 2 |