

BUILDING METROLOGY AND QUALITY CONTROL
(course title)

COURSE SYLLABUS ABSTRACT
of higher education institution
speciality

1-70 02 01 Industrial and Civil Engineering
(speciality code and name)

(specialisation code and name)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	4	4	3
Semester	7	7	6
Lectures, hours	14	4	4
Practical classes (seminars), hours	16	4	4
Pass/fail, semester	7	7	6
Contact hours	30	8	8
Independent study, hours	6	28	28
Total course duration in hours / credit units	36/1.0		

1. Course outline

1. Introduction.
2. The system of ensuring the uniformity of measurements of the Republic of Belarus.
3. Fundamentals of the theory of errors and mathematical statistics.
4. Fundamentals of the theory of technical measurements.
5. Quality control in building construction.

2. Course learning outcomes

Upon completion of the course, students will be expected to know:

- organizational, functional and legislative bases of the system of ensuring the uniformity of measurements of the Republic of Belarus; fundamentals of the theory of technical measurements, rules and measuring instruments in construction; types and methods of control of construction and installation works; the procedure for carrying out and registration of the results of control of construction and installation works;

be able to:

- use regulatory documents on metrology and quality control in construction; use methods, rules and measuring instruments in construction; use methods of conducting and processing the results of quality control of construction and installation works; perform measurements of controlled parameters of structural elements of buildings and structures with the required accuracy;

possess:

- modern methods of quality control of structures of buildings and structures; PC during inspection, quality control and testing of building structures of buildings and structures; innovative technologies for the manufacture of building structures and methods of their testing.

3. Competencies

AK-1. Be able to apply basic scientific and theoretical knowledge to solve theoretical and practical problems.

AK-2. Possess systematic and comparative analysis.

AK-3. Possess research skills.

AK-4. Be able to work independently.

AK-7. Have skills related to the use of technical devices, information management and computer work.

AK-8. Have oral and written communication skills.

SLK-1. Possess the qualities of citizenship.

SLK-3. Have the ability to interpersonal communication.

SLK-4. Be able to work in a team.

PC-10. Design structural schemes of buildings and structures of various functional purposes as part of a group of specialists or independently.

PC-11. Develop projects for the organization of construction, projects for the production of works and technological maps for certain types of work.

PC-12. Perform calculations and construction of building structures using computer-aided design methods.

PC-13. To evaluate the effectiveness of the use of various means of mechanization in the design of technology and organization of construction and installation works.

PC-14. To determine the current directions of scientific research in the field of construction in order to introduce effective building materials, structures and technologies into practice.

PC-15. Organize work on the preparation of abstracts, scientific articles and applications for inventions in the field of industrial and civil engineering.

PC-16. To carry out patent and information search, to evaluate the patentability and patent purity of technical solutions in the field of industrial and civil construction.

PC-17. To carry out innovative and inventive activities in the field of construction as part of a team of specialists or independently.

PC-18. Organize and carry out production activities for the construction of buildings and structures in accordance with the project documentation and current regulatory documents.

PC-19. To set tasks and reasonably choose methods for optimizing production processes in the construction of buildings and structures.

PC-20. Analyze operational information about the processes of work at the facility and develop solutions for their optimization.

PC-21. To carry out operational quality control of construction and installation works in accordance with the design and regulatory documentation.

PC-22. Formulate and implement measures to improve the quality of construction products, reduce energy intensity and material costs when performing construction and installation work.

PC-23. Monitor compliance with labor protection and safety standards during the construction of buildings and structures.

PC-24. To search, systematize and analyze information on the prospects for the development of the construction industry, innovative technologies, projects and solutions.

PC-25. Determine the goals of innovation and how to achieve them in the field of construction.

PC-26. Work with scientific, technical, legal literature in the field of industrial and civil engineering.

PC-27. To develop a feasibility study of the effectiveness of new structural solutions of buildings and structures.

PC-28. Conduct experimental studies of new building structures and materials in order to introduce them into production.

4. Requirements and forms of midcourse evaluation and summative assessment

The current certification of students is carried out to determine the compliance of the results of their educational activities with the requirements of educational standards, educational and program documentation of educational programs of higher education. The form of the current certification of students is a credit. The current certification is carried out orally and in writing. The form of intermediate certification is a control work, which is carried out in a test form.

The final assessment is determined according to the tables:

Assessment	Pass	Fail
Points	51–100	0–50