

BASICS OF AUTOMATION OF DESIGN IN CONSTRUCTION

ANNOTATION

TO THE CURRICULUM OF THE EDUCATIONAL INSTITUTION

Specialty 6-05-0732-02 – “Real Estate Expertise and Management”

	Form of obtaining higher education
	Full-time (daytime)
Well	3
Semester	6
Lectures, hours	16
Laboratory classes, hours	34
Credit, semester	6
Classroom hours for the academic discipline	50
Independent work, hours	58
Total hours for the academic discipline / credit units	108/3

1. Brief content of the academic discipline: 1. Features of a modern design system. 2. Types of design. 3. Problems of design automation. 4. Main types of design support. 5. The role and importance of design automation. 6. Principles of CAD creation. 7. Composition and structure of CAD. 8. Types of CAD tool complexes and components. 9. Interaction of CAD with other automated systems. 10. Requirements for CAD technical means and their classification. 11. Levels of technical support. 12. Typical composition of an automated workplace. 13. Architecture of a technical complex. 14. Operating modes. 15. Structure and purpose of CAD software. 16. Types of software. 17. Software complexes. 18. Software documents. 19. Data. 20. Types of data. 21. Data models. 22. Databases and data banks. 23. Database management systems (DBMS). 24. Mathematical support of CAD. 25. Mathematical models. 26. Methods and approaches to their formation. 27. Methodological and organizational support of CAD. 28. Legal support of CAD. 29. Classification of programming and design languages. 30. Types and forms of dialogue. 31. Structural organization of dialogue. 32. Dialogue procedures of design. 33. Properties of criteria and their classification. 34. Development of criteria and requirements for them. 35. Methods of criteria development. 36. Evaluation of the weight of criteria. 37. Methods of criteria evaluation.

2. Learning outcomes:

know : areas of application of specialized software and have a level of knowledge corresponding to Certified User of the following software: ArchiCAD , Revit , Renga , AutoCAD , KOMPAS, SketchUp , Microsoft Excel, Microsoft Project, Robot , SCAD, Lira, 3d max , BIMx , and other software packages designed to solve automated design problems, including analogues;

be able to : set and solve problems related to the design of buildings and structures. Model and perform the necessary engineering calculations, and also be able to present and visualize the results of their activities in accordance with the regulated requirements for the design and estimate documentation system and at a high professional and aesthetic level. Update the acquired theoretical and practical skills.

have the skill of : analyzing the latest scientific achievements in the field of construction.

3. Competencies to be developed : Apply software tools to solve engineering problems.

4. 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 program documentation of educational programs of higher education. The form of current certification of students is a test. Current certification is carried out in oral and written form.