**Educational-Professional Program Consolidated Information**

**Educational-professional program «Consolidated Information» (of the first level of Higher Education in Specialty 122 Computer Science)** is oriented on the preparation of the high-qualified specialists who own the knowledge system in the field of the computer science, systematization of the knowledge and competitive intelligence, who are familiar with modern scientific achievements of this field, who are able to formulate and solve and systemize practical issues in their professional activity with the usage of the fundamental and applicable methods what gives an opportunity to solve the innovational tasks effectively according to an appropriate level of professional activity.

The accent of the program is focused on the formation of a specialists who will be capable to solve complex problems associated with the use of the modern and advanced intellectual knowledge of an oriented cognitive methods and technologies of the noosphere stage of science development; ontological, objects and other models of information and knowledge of any problem areas for increasing competitiveness and the formation of an intellectual capital of the organizational system, educational process, etc .; information-analytical and system-organizational support of the activities of legal entities for the purpose of its radical improvement on the basis of knowledge-oriented formulation and forecasting of the variants of the operational and strategic decisions on the basis of the system methods and technologies of the noosphere stage of science development.

**The Bachelor will own the following skills and competencies:**

1. Ability to mathematical and logical thinking, formulation and research of the mathematical models, in particular, discrete mathematical models, substantiation of the choice of the methods and approaches for solving the theoretical and applied problems in the field of computer sciences, analysis, and interpretation of the obtained results.

2. The ability to detect the laws of the random phenomena, the application of the statistical data processing meth, ods and the evaluation of the stochastic processes in the real world.

3. Ability to construct the logical conclusions, use of the formal languages and models of algorithmic calculations, design, development, and analysis of the algorithms, evaluation of their efficiency and complexity, solvability and insolubility of the algorithmic problems for the adequate modeling of the subject areas and creation of the software and information systems.

4. Ability to understand modern methods of the mathematical modeling of the objects, processes, and phenomena, to develop models and algorithms of the numerical solving of problems of the mathematical modeling taking into account the errors of the approximate numerical solution of the professional problems.

5. Ability to formalize the description of the tasks of studying operations in organizational-technical and socio-economic systems of various purposes, to determine their optimal solutions, to build models of the optimal choice of the management taking into account changes in the parameters of the economic situation, to optimize the management processes in systems of different purposes and level of the hierarchy.

6. Ability to systematic thinking, application of the methodology of systemological analysis for the research of complex problems of the different types, formalization methods and solving systemic problems with conflicting goals, uncertainties, and risks.

7. Ability to design and develop software using various programming paradigms: generalized, object-oriented, functional, logical, with appropriate models, methods and algorithms of computing, data structures, and management mechanisms.

8. Ability to implement a multi-level computing model based on client-server structure, including databases, data warehouses, and knowledge bases, to provide computing needs of many users, transaction processing including cloud services.

9. Ability to the intelligent multidimensional analysis of data and their operational analytical processing with the visualization of the results of the analysis in the process of solving applied problems in the field of computer sciences.

10. Ability to provide the organization of the computing processes in information systems for different purposes taking into account architecture, configuration, performance indicators of the operation of operating systems and system software.

11. Ability to search and analyze knowledge in the information environment; the use of competitive intelligence methods for the search, reception, and processing of information, ensuring the sustainable development of the organization on the basis of systemological noosphere structural and object approach.

12. Ability to investigate, systematize conceptual knowledge on the basis of systemological classification analysis (SCA).

13. Ability to apply modern knowledge oriented methods, technologies and tools using SKA.

14. Ability to develop fragments of the conceptual classification models of problem areas on the basis of SKA.

15. Ability to noosphere system thinking; application of the methodology of the noosphere system analysis for the study of complex problems of different characteristics, methods of formalization and solving system problems.

16. The ability to use modern tooling means to optimize business activity using a systemological approach (SKA, Node-Function-Object (UFO)).

17. Ability to conduct a systemological analysis of the activities and structure of organizations using the methods of SKA and UFO.

18. Ability to use standards, software tools for the visual modeling supporting on the basis of a systemological approach and methods of SKA and UFO in solving practical problems.

19. Ability to analyze and formulate customer requirements on the basis of a systemological approach.

20. The ability to use modern Internet tools to optimize the work of organizations on the basis of a systemological approach.

21. Ability to provide analytical support to the organization on the basis of a systemological approach.

22. Ability to use the basic methods and means of ensuring information security in order to ensure the protection of information resources based on the systemological approach and methods of SKA and UFO.

23. Ability to analyzing and functional modeling of the business processes, creation and practical application of functional models of complex systems, synthesis of the complex systems based on the use of their computer models on the basis of a systemological approach.

24. Ability to use modern information and communication technologies and methods in the field of computer science and business taking into account the system-logical approach.

25. Ability to use decision support technology based on a systemological approach.

26. Ability to search, analyze, accumulate and systematize information and knowledge about the internal and external environment of an organizational system based on a systemological approach.

27. Ability to analyze the business systems and analytical processing of the information resources to ensure the stable operation of the complex systems based on the systemological approach and methods of SKA, UFO.

28. Ability to remove and systematize knowledge in the subject field, create the ontological models of knowledge using SKA.

29. Ability to use basic methods and models of the management and knowledge engineering using the systemological analysis.

**Some obligatory subjects of professional training:**

1. Discrete Mathematics.

2. System Analysis.

3. Numerical Methods.

4. Methods of Optimization and Operations Research.

5. Probability Theory, Probabilistic Processes, and Mathematical Statistics.

6. The decision-making theory.

7. Algorithmization and Programming.

8. Databases and Knowledge Organization.

9. Theory of Algorithms.

10. Intellectual Data Analysis.

11. Economics and Business.

12. Introduction to Specialization Consolidated Information (Competitive Intelligence).

13. Introduction to Management and Systematization of Knowledge.

14. Information Technologies for Organization and Constructing of Business Processes.

15. Object-Oriented Analysis and Modelling of Systems.

16. Fundamentals of Analysis, Development and Requirements Control.

17. Basics of Using Social Networks in Internet to Enhance Competitiveness.

18. The System-logical Foundations of the Modelling of Complex Systems.

19. Analytical and Information Systems in Business.

20. Ontological Engineering Fundamentals.

21. Web-Technologies and Internet-Resources in Business Management.

22. Fundamentals of Information and Analytical Activity.

23. The Theory of Multisets Fundamentals.

24. Web Analytics.

25. Information and Analytical Support of Business Systems.

**Some selected disciplines of professional training:**

1. Internet Marketing.

2. Organizational Informatics.

3. Introduction to the Communicative Foundations of Information and Analytical Activity.

4. Information and Analytical Methods for Forming a Communication System.

5. The firm's Strategy for the Development of Information Systems.

6. Business Analytics Basics.

7. Basics of the Consolidation of Information Resources.

8. Basics of SEO.

9. Decision-Making Support Systems.

10. Practical Tools of Competitive Intelligence.

11. Information Technology in Business and Management.

12. Elements of the Theory of Constraints.

13. SMART City Technologies.

14. Fundamentals of Social Media Marketing.

15. Time Management.

16. Modern Information Processing Technologies.

17. Advertising Management of Information Systems.

18. Consolidation and Protection of Information in the company.

19. Strategic Planning of Information-Analytical Activity.

20. Standardization and Certification of Information Systems and Technologies.

21. ERP systems Fundamentals.

22. Information Support Systems of Analytical Activity.