



## Syllabus to Academic Discipline "LOGIC"

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| <b>Level of Higher Education</b>                     | First (Bachelor's degree)   |
| <b>Discipline Status</b>                             | Academic discipline of the selective component of the <b>university list</b>  |
| <b>Course Description</b>                            | can be taught <i>in any which course</i>  |
| <b>Semestr</b>                                       | can be taught <i>in any which semester</i>  |
| <b>Tptal (ECTS credits / hours)</b>                  | 4 credits (120) hours   |
| <b>Language of Study</b>                             | English   |
| <b>Course Description (Subject of Study)</b>         | The discipline «Logic» is the theoretical and practical basis of formation of a personality's logical culture. Logic skillfully and effectively teaches to organize and lead a discussion, examine arguments for validity, be consistent in the conclusions and argumentation. The logical culture of the future specialist is an integral feature of his professionalism, part of the spiritual culture of man. The logical culture of the future specialist in the sphere of law is an integral feature of his professionalism, part of the spiritual culture of man.   |
| <b>What is Acquired (Main Outcome of the Course)</b> | <p>This discipline helps to form a system of knowledge about the laws and principles of correct reasoning, forms of abstract thinking (concepts, judgments and inferences), methods of debate, the concept of deontic logic as the logic of norms. Logic identifies the correct forms of reasoning by elucidating the features of logical consequence, taking into account both logical syntax (sequencing) and logical semantics (meaning of statements). The distinctiveness of the logic of norms is linked to different levels of commitment (strong, weak, and zero) and its application or controversy in real situations. Additionally, deontic logic examines conditional obligations and norms.</p> <p>To think freely, propose diverse solutions to problems, and choose the best one, a person must think critically and reflectively, rather than merely repeating memorized postulates. Logical thinking skills are essential as they help individuals reason through important decisions, solve problems, generate creative ideas, and set goals—all of which are vital for career development.</p> |

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| <p><b>What is Acquired (Main Outcome of the Course)</b></p>              | <p>Combining the practical knowledge of logic with the solution of practical problems, a person will be able to think correctly, avoid elementary mistakes in his reasoning and recognize them in the reasoning of others.</p> <p><b>As a result of studying the discipline you will acquire the following competencies - skills and abilities:</b></p> <ul style="list-style-type: none"> <li>– the ability to solve complex specialized problems and practical problems that are characterized by complexity and uncertainty of conditions, in the field of logistics management or in the learning process, which involves the application of theories and methods of social and behavioral sciences (IC 1);</li> <li>– the ability to thoroughly and consistently defend one's position based on thorough knowledge of logic (GC3);</li> <li>– the ability to use the acquired theoretical knowledge of logic in professional logistics activities (GC4);</li> <li>– the ability to learn and master modern knowledge (GC9);</li> <li>– the ability to conduct research at the appropriate level (GC10);</li> <li>– the ability to use knowledge of logical laws to generate new ideas in the logistics field and be creative (GC12);</li> <li>– the ability to acquire flexible and critical thinking, the ability to critically assess personal virtues and shortcomings (GC17);</li> <li>– the ability to work in a team and establish interpersonal interaction in solving professional problems (PC 9);</li> <li>– the ability to clearly, logically, correctly and consistently build one's reasoning and draw true conclusions from them (PC11);</li> <li>– the ability to analyze and structure the problems of the organization, to form informed decisions (PC 12).</li> </ul> |
| <p><b>How to Use the Acquired Knowledge and Skills (Competences)</b></p> | <p><b>Logic</b> teaches individuals to articulate their thoughts precisely, prove truths through logical reasoning and arguments, and refute incorrect propositions. It aids in mastering fundamental techniques and rules for constructing deductive, inductive, and abductive inferences. Additionally, it enables the use of concepts and terms in deontic logic, which deals with norms and evaluations. Furthermore, it enhances the understanding of the logical foundations of argumentation and refutation.</p>  |

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| <b>Academic Logistics</b> | <p><b>Course content.</b><br/> Logic and logistics: division of concepts. Reasoning as a subject of logic. Philosophical, modal, mathematical, and formal logics; their integration in cognition and practical activity. The subject and importance of formal logic in the professional economic activity. The main stages of development of logic. Traditional, classical, non-classical logic. Formalization as a Method of Logic. The concept of law. Types of laws and their interconnection. Laws of formal logic: law of identity, law of non-contradiction, law of the excluded middle and sufficient reason. Principles of correct thinking. The place of laws of formal logic in managerial activity. Logical laws of thinking and the logic of systems development. Laws of Propositional Logic. Concept as a Form of Abstract Thinking. Logical analysis of logistics concepts. Limitation and generalization of concepts. Separation of concepts. Definition. Types and characteristics of definitions. Definition rules. Classification, description, characteristics. Aspect definitions of logistics. Judgment as a Form of Abstract Thinking. Counting of Predicates. Inference as a Form of Thinking. Non-Mediated Deductive Reasoning. Mediated Deductive Reasoning. Complex and Compound Abbreviated Deductive Reasoning. Abbreviated syllogisms: entimema and epicheirema. Complex syllogisms: progressive and regressive polysyllogisms. Abbreviated polysyllogisms: Aristotelian and Hocklenian sorites. Methodology of system analysis and modeling of the structure of logistics systems. General characteristics of inductive inference. Relationship between induction and deduction in science and practice. Induction and its types. Complete and incomplete induction. Mathematical induction. The essence of inference by analogy. Types of analogies: analogy of properties and analogy of relations. Hypothesis as a form of knowledge development. Logical nature and role of hypothesis in cognition. Types of hypotheses. Rules for formulating of hypotheses. Stages of hypothesis developing. The essence and meaning of proof. Logical structure of proof. Logical and rhetorical techniques of argumentation. Debate, dispute, dialogue, discussion, polemics. Modal logics: alethic, temporal, epistemic, deontic. Modal logics and "possible worlds".</p> <p><b>Types of classes:</b> <i>lectures, seminars</i></p> <p><b>Teaching methods:</b> <i>educational discussion, problem-solving, deductive and analytical methods, case-presentation.</i></p> <p><b>Forms of study:</b> <i>full-time, part-time, distance.</i></p> |
| <b>Prerequisites</b>      | General knowledge of basic sciences, knowledge of the disciplines: "Philosophy", "Deontic Logic", "Sociology", "Culturology".  |
| <b>Details</b>            | Knowledge of «Logic» is universally beneficial and applicable across all disciplines and educational levels. Mastery of logical principles enhances the ability to write clear and coherent scientific papers, ensuring arguments are well-structured and evidence-based. It is invaluable in preparing comprehensive and persuasive reports, allowing for the presentation of data and analysis in a clear, logical manner. Moreover, a solid grasp of logic  |

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| <b>Information Support with Repository and Fund of Scientific-technical Library of NAU</b> | <p>empowers individuals to convincingly defend their own positions with reasoned arguments and effectively critique opposing viewpoints. This skill set is essential not only in academic and professional contexts but also in everyday decision-making and problem-solving, fostering critical thinking and informed debate.</p> <p><b>Scientific and Technical Library of NAU:</b><br/> <b>NAU repository:</b></p> <ol style="list-style-type: none"> <li>1. English-Ukrainian-Russian Explanatory Dictionary of Philosophical Terms / M.A. Abysova, S.M. Ischuk, L.V. Kadnikova, T.A. Poda, T.G. Shorina – K. – 2015.</li> <li>2. Philosophy (Philosophy. Logic. Religion Studies. Ethics. Aesthetics): Textbook / Edited by L.V. Kadnikova – K.: NAU, 2012. – 596 p.</li> <li>3. Drotyanko L.G, Abysova M.A and others Philosophy of Dialogue in the Communicative Practices of the Information Society // Drotyanko L.G, Abysova M.A, Poda T.A, Ordenov S.S, NAU - 2020. <a href="https://er.nau.edu.ua/handle/NAU/42478">https://er.nau.edu.ua/handle/NAU/42478</a></li> </ol> |
| <b>Location and Electronic Device Policy</b>   | <p>Training laboratory "Academic laboratory of philosophical disciplines study", projector, diagrams, tables, etc.</p>  |
| <b>Semester Control, Exam Procedure</b>  | <p>Differential credit, testing, creative tasks</p>   |
| <b>Department</b>  | <p>Department of Philosophy</p>   |
| <b>Faculty</b>   | <p>Faculty of Linguistics and Social Communications</p>   |
| <b>Teacher (s)</b>   | <div data-bbox="507 1243 762 1503" data-label="Image"> </div> <p><b>PODA TETIANA</b><br/> <b>Position:</b> Associate Professor of Department of Philosophy<br/> <b>Academic Degree:</b> PhD in Philosophy<br/> <b>Profile:</b></p> <p><a href="https://scholar.google.com.ua/citations?user=uf0uooUAAAAJ&amp;hl=ru">https://scholar.google.com.ua/citations?user=uf0uooUAAAAJ&amp;hl=ru</a><br/> <b>Phone number:</b> +38(044)406-74-01<br/> <b>E-mail:</b> tetiana.poda@npp.nau.edu.ua<br/> <b>Working Place:</b> NAU, Building 8, room 1005</p>   |
| <b>Discipline Uniqueness</b>   | <p>Logic cultivates unconventional thinking in addressing epistemological issues, enhances effective communication skills, and encourages a creative approach to mitigating the effects of poor communication. It also teaches how to avoid clichés and select the optimal solutions for complex problems.</p>  |
| <b>Link</b>  |   |