

(F 03.02 – 110)

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

National Aviation University

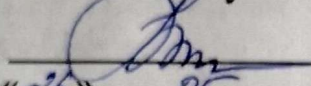
Faculty of Linguistics and Social Communications

Department of Philosophy



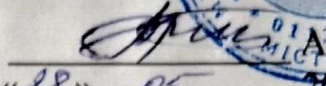
AGREED

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«26» 05 2021

APPROVED

Vice-Rector for Academics


A. Poldakin
«28» 05 2021



Quality Management System

COURSE TRAINING PROGRAM

On "Deontic Logic"

Field of Study: 08 "Law"


Speciality: 081 "Law"

Educational Professional program: "Jurisprudence"

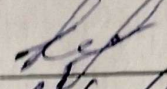
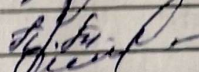
Mode of study	Sem.	Total (hours / ECTS Credits)	L.	PT	LC	LC	Self-study	Tests	Mode of Final Control
Full-time	1	90/3	15	15	-	60	-	-	Diff. test 1s
Extramural	-	-	-	-	-	-	-	-	-

Index: CB – 9 – 081/20 – 1.1

QMS NAU 12 .01. 10 -01-2021

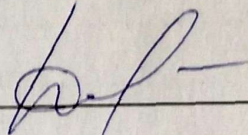
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The Course Training Program on «Deontic Logic" is based on the Bachelor Extended Curriculum CB -9- 081/20 -1.1 for the for the specialty 081 "Law", Educational Professional Program "Law" and correspondent normative documents.

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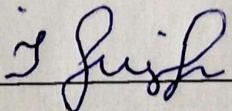
Discussed and approved by the Department of Philosophy, Minutes № 6 of «12» 05 2021.

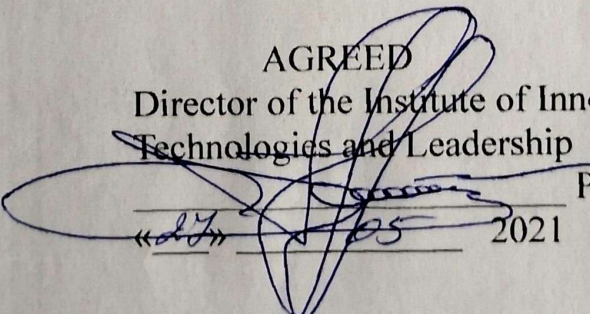
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Discussed and approved by the Graduate Department for the Specialty 081 «Law», Educational Professional Program «Jurisprudence» – Department of Commercial, Air and Space Law, Minutes № 8 of «25» 05 2021.

Head of the Department




AGREED
Director of the Institute of Innovative
Technologies and Leadership
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«27» 05 2021

Document level – 3b


The planned term between the revisions – 1 year

Master (Registered) copy

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INTRODUCTION

The Course Training Program on the subject «Deontic Logic» is developed on the basis of the «Methodic Guidelines for the development and execution of Course Training Program of subjects», promulgated by orders № 071/poz. dated 10.07.2019, № 088/poz. dated 16.10.2019 and corresponding normative acts.

1. EXPLANATORY NOTE

1.1. Planned results

This subject is the theoretical and practical basis of personality's logical culture. Logic skillfully and effectively teaches to organize and lead a discussion, to examine general forms (valid and fallacies) of arguments, to be consistent, convincing in the conclusions, to carry out content analysis of texts. The logical culture of the future law specialist is an integral feature of his professionalism, part of the spiritual culture of man.

The purpose of teaching of the subject is the formation of a system of knowledge about the laws and principles of correct reasoning, forms of abstract thinking (concepts, propositions and reasoning), methods of debate, the concept of deontic logic as the logic of norms.


The tasks of learning of the subject are:

- mastering the basic concepts and terms of logic;
- acquiring the skills of correct formulation of opinions, abilities to prove the truth logically and argumentatively, to refute false statements;
- studying the forms of abstract thinking: concepts, judgments and inferences;
- mastering the basic techniques and rules of construction of deductive, inductive and traductive reasoning;
- mastering the concepts and terms of deontic logic as logic of norms and validity;
- mastering the logical bases of argumentation and refutation;
- implementation of using content analysis of texts to analyze its coherence, consistency, validity.

As a result of study this subject a student must have the following **competencies**:

- ability to think abstractly, to conduct an analysis and synthesis;
- ability to learn and master modern knowledge;
- ability to be critical and self-critical;
- ability to logical, critical and systematic analysis of documents, understanding their legal nature and meaning.

Interdisciplinary links of the subject: the academic discipline «Deontic logic», is the basis for studying the following subjects: «Philosophy of Law», «Legal

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ethics», «Deontological Bases of Law-Enforcement Practice», «Organization of research work».

1.2. SUBJECT CONTENT

The subject content of the discipline is structured modularly and consists of a training **module № 1 «Deontic logic»**, which is logically complete, relatively independent, integral part of the discipline, the mastering of which involves modular control work and analysis of the results of its implementation.


MODULE 1. DEONTIC LOGIC

Topic 1. The Subject and Meaning of Logic. Formalization as a Method of Deontic Logic. Reasoning as a subject of logic. Formal, dialectical, modal, mathematical, ambiguous, deontic and ambiguous logics; their integration in cognition. The subject and importance of formal logic in the professional activity of a lawyer. The main stages of development of logic. Traditional, classical, non-classical logic. Discursive thinking, intuition, creativity, conjecture, prediction and other forms of intellectual activity. Reasoning and its structure. Logical correct and incorrect reasoning; substantive truth and falsity of judgments. Sensory cognition and abstract thinking. Feelings, perceptions, ideas as ways of sensory perception of reality. Concepts, judgments, inferences as forms of abstract thinking. Form and content of considerations. Formalization is a method of logic. The language of algebra of expressions. Logical connectors: negation, conjunction, disjunction, rigorous disjunction, implication, equivalence.

Topic 2. Laws of Thinking. The concept of law. Types of laws. Laws of formal logic: identity, prohibition of contradiction, excluded third and sufficient grounds. The concept of the formula of symbolic logic. Tautologies, contradictions and executable formulas. The basic laws of symbolic logic: double negation, contraposition, reduction to the absurd, de Morgan's laws, syllogism and others. Truth tables of logical conjunctions and formulas. The value of the laws of logic for the analysis of legal documents. Universality of the laws of symbolic logic in all spheres of cognitive activity and social practices. Analysis of compliance with the norms of logic in artistic, scientific, journalistic texts and legal documents.

Topic 3. Concept as a form of Abstract Thinking. Semantics and semiotics. Name, meaning, significance, word. The dissimilarity of concepts, words and thoughts. Concept as a form of thought. Linguistic means of expression. Procedures for the formation of concepts: analysis, comparison, abstraction, synthesis, generalization. The content and scope of the concept. The law

of the inverse relationship between volume and content. See understand. The concept of the set. Operations on sets. Concept as a set. Logical relations between concepts.

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Logical operations on concepts: constraints and generalizations, division, definition, classification, categorization, structuring, cataloging.


Topic 4. Judgment as a Form of Thinking. General characteristics of judgment as a form of abstract thinking. Subject and predicate of judgments. Linguistic means of expressing judgments. Logical analysis of sentences. Types of judgments. Division of simple judgments by quantity and quality. Distribution of terms in simple categorical judgments. Logical square. The language of predicate algebra. Quantifiers of generality and existence. Restructuring of simple judgments. Complex judgments and their types. The relationship between complex judgments. Formal record of complex judgments. The truth of complex judgments. Modal judgments. Deontic judgments. Questions and answers: types and structure.

Topic 5. Inference as a Form of Thinking. The theory of Deductive Reasoning. General characteristics of inference. Types and structure of inferences. Relationship between deduction, induction and analogy. Deductive inference: features, properties, scope. Types of deductive inferences. Deductive inferences according to the laws of symbolic logic: purely conditional, conditionally categorical, dividing-categorical, conditionally-dividing. Dilemmas. Simple categorical inference: definitions and types. Structure and rules of construction of syllogisms. Abbreviated syllogisms: entimema and epicheirema. Complex syllogisms: progressive and regressive polysyllogisms. Abbreviated polysyllogisms: Aristotelian and Hocklenian sorites. Application of deductive reasoning in the analysis of texts, construction of speeches and speeches, proving the truth of statements.

Topic 6. Inductive Inference. Inference by Analogy. General characteristics of inductive inference. Relationship between induction and deduction in science and practice. Induction and its types. Complete and incomplete induction. The concept of causation. Methods of establishing causal relationships. Increasing the truth of inductive reasoning. Errors in inductive inferences. The essence of inference by analogy. Types of analogies: analogy of properties and analogy of relations. Exact and inaccurate analogy. Rules of inference by analogy. Cognitive value of analogy.

Topic 7. Hypothesis as a Form of Knowledge Progress. Proving and Refutation. The Art of Controversy. Forms of knowledge existence: fact, problem, hypothesis, theory, concept. Fact as the basis and initial stage of the true

knowledge. Ways to confirm and refute the facts. Hypothesis: logical nature and types. Rules for formulating hypotheses. Stages of hypothesis developing. Ways to

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hypotheses testing. Falsifiability of hypotheses: direct and indirect. Version as a kind of hypothesis. Theory. Types and structure of theories. Criteria for the correctness of theories. Concept: structure and types. Concept and conceptualization. The essence and meaning of proof. Logical structure of proof. Types of evidence. Logical rules and errors in proof. Rebuttal as a form of proof. Logical rules and errors in refutations.

Topic 8. The art of controversy

Theory of speech acts: implicature and presuppositions. Argumentation as a form of evidence-based thinking. Dispute, dialogue, discussion, controversy, discourse. Classification and structure of disputes. Principles and rules of dispute. Logical and rhetorical methods of argumentation. Conflict and its logical modeling. Logic, rhetoric, heuristics in the system of communications. Methods and types of manipulation in communicative acts. Elements of «black rhetoric».



2. BASIC CONCEPTS OF GUIDANCE ON THE SUBJECT

2.1. Structure of the discipline (thematic plan)

№	Topic	Academic Hours							
		Full-time				Extramural			
		Total	Lectures	Practical	Self-Study	Total	Lectures	Practical	Self-Study

1	2	3	4	5	6	7	8	9	10
Module №1 «Deontic Logic»									
1.1	The Subject and Meaning of Logic. Formalization as a Method of Deontic Logic	1 semester				1 semester			
		12	2	2	8	-	-	-	-
1.2	Laws of Thinking	13	2	2	9	-	-	-	-
1.3	Concept as a form of Abstract Thinking	12	2	2	6	-	-	-	-
1.4	Judgment as a form of thinking	12	2	2	6	-	-	-	-
1.5	Inference as a Form of Thinking. The theory of Deductive Reasoning	12	2	2	8	2 semester			
		-	-	-	-	-	-	-	-
1.6	Inductive Inference. Inference by Analogy	12	2	2	8	-	-	-	-
1.7	Hypothesis as a Form of Knowledge Progress. Proving and Refutation. The Art of Controversy	13	2	1	10	-	-	-	-
1.8	The art of controversy								
1.9	Module Control Work №1	4	1	-	3	-	-	-	-
1.10	Control (home) work					-	-	-	-
1.11	Final semester test					-	-	-	-
Total for the module 1		90	15	15	60	-	-	-	-
Total for the subject		90	15	15	60	-	-	-	-
Total for the term		90	15	15	60	-	-	-	-



3. BASIC CONCEPTS OF GUIDANCE ON THE SUBJECT

3.1. Methods of Study

The following teaching methods are used in the study of the discipline: explanatory-illustrative method; method of problem statement; heuristic method, case presentation, etc.

The implementation of these methods is carried out during lectures, practical classes, independent problem solving, work with educational literature.

3. 2. List of References (Basic and Supplementary)

Basic literature

3.2.1 Restall G. Logic. An introduction. - London: Routledge, 2006. - 178 p.

3.2.2 Zegarelli M. Logic for Dummies. - Hoboken: Wiley Publishing, Inc., 2007. - 362 p.

3. 2. 3. Black, Beth (ed.), 2012, *An A to Z of Critical Thinking*, London: Continuum International Publishing Group.

3. 2. 4. Cresswell, M. J., 2001, "Modal Logic", in L. Goble (ed.), *The Blackwell Guide to Philosophical Logic*, Oxford: Blackwell, 136–158.

3. 2. 5. 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.

3.2.6. Girle, R., 2009, *Modal Logics and Philosophy (2nd Edition)*, Routledge, New York, New York.

3.2.6. Philosophy (Philosophy. Logic. Religion Studies. Ethics. Aesthetics): Textbook / Edited by L.V. Kadnikova – K.: NAU, 2012. – 596 p.


3.2.7. *Philosophy of logic, 1986*, second edition, Englewood Cliffs: Prentice-Hall.

Philosophy (philosophy, logic, religious studies); Manual / L. Dronianko, M. Abysova and others, - K. – NAU.- 2014. - 120 p.

3.2.8. Sheard, M., 1994, "A Guide to truth Predicates in the Modern Era", *Journal of Symbolic Logic*, 59: 1032–54.

3.2.9. Wedin, Michael V., 1990. "Negation and Quantification in Aristotle", *History and Philosophy of Logic*, 11 (2): 131–150.

3.2.10. Zhou, C., 2016, "Logical Foundations of Evidential reasoning with Contradictory Information", in K. Bimbo (ed.) 2016, 213–246.

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Supplementary literature

3.2.11. Center for Assessment & Improvement of Learning, 2017, *Critical Thinking Assessment Test*, Cookeville, TN: Tennessee Technological University.

3.2.12. “Critical Thinking: A Streamlined Conception”, *Teaching Philosophy*, 14(1): 5–24. Doi: 10.5840/teachphil19911412

3.2.13. Girard, P. (2006) “From Onions to Broccoli: Generalizing Lewis' Counterfactual Logic”, *Journal of Applied Non-Classical Logic*, 17(2): 213–229.

3.2.14. Humberstone, L. 2015, *Philosophical Applications of Modal Logic*, College Publications, London.


3.2.15. Woodward, J. (2005) *Making Things Happen: A Theory of Causal Explanation* (Oxford Studies in the Philosophy of Science), New York: Oxford University Press.

3.3. Information resources on the Internet

3.3.1. Institutional repoz and packaging of NAU. <http://er.nau.edu.ua>

3.3.2. <http://plateau.stanford.edu/>

3.3.3. The science of everyday thinking. https://courses.prometheus.org.ua/courses/UQx/THINK101/2016_T2/ about

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4. RATING SYSTEM OF KNOWLEDGE AND SKILLS ASSESSMENT

4.1. Rating system of Scoring of kinds of academic activities of a student according to the scale given in the table 4.1 below.

Table 4.1

Type of work	Max number of grades	
	Full-time	Extramural
1 semester		
Module № 1 «Deontic logic»		
<i>Academic Work</i>	Grade	-
Carrying out a task during practicals	8p. × 2 = 16	-
Carrying out express-tasks during practicals	18p. × 3 = 54	-
<i>For carrying out module test № 1, a student must receive at least 42 points</i>		-
Module work №1	30	-
(Home) control work		-
Total for Module Test №1	100	-

The credit rating is determined (in points and on a national scale) based on the results of all types of educational work during the semester.

4.2. The completed curricular activity is accounted if a student received a positive mark according to the national scale.

4.3. The grades a student has been given for the different kinds of academic work are summed up and the result constituting a Current Module Grade is entered into the Module Grade Register.

4.4. The Semester Module Grade and the Graded Test Grade together make up a Total Semester Grade whose correspondence to the National Scale and the ECTS Scale (Supplement 5).

4.5. The Total Semester Grade is entered into an Individual Curriculum and student's Degree Card, for example: **92/Ex/A, 87/Good/B, 79/Good/C, 68/Sat/D, 65/Sat/E.**

4.6. The Total Grade for the discipline is equal to the Total Semester Grade with its further correspondence to the National Scale and the ECTS Scale.



(Ф 03.02 – 01)

АРКУШ ПОШИРЕННЯ ДОКУМЕНТА

№ прим.	Куди передано (підрозділ)	Дата видачі	П.І.Б. отримувача	Підпис отримувача	Примітки

(Ф 03.02 – 02)

АРКУШ ОЗНАЙОМЛЕННЯ З ДОКУМЕНТОМ

№ пор.	Прізвище ім'я по-батькові	Підпис ознайомленої особи	Дата ознайомлення	Примітки

(Ф 03.02 – 04)

АРКУШ РЕЄСТРАЦІЇ РЕВІЗІЇ

№ пор.	Прізвище ім'я по-батькові	Дата ревізії	Підпис	Висновок щодо адекватності

(Ф 03.02 – 03)

АРКУШ ОБЛІКУ ЗМІН

№ зміни	№ листа (сторінки)				Підпис особи, яка внесла зміну	Дата внесення зміни	Дата введення зміни
	Зміненого	Заміненого	Нового	Анульованого			

(Ф 03.02 – 32)

УЗГОДЖЕННЯ ЗМІН

	Підпис	Ініціали, прізвище	Посада	Дата
Розробник				
Узгоджено				
Узгоджено				