

## Tárgytematika / Course Description Logic

GKNM\_INTA056

Tárgyfelelős neve /

Teacher's name: dr. Fullér Róbert

Félév / Semester: 2024/25/1

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 2/2/0

Tárgy féléves óraszám /

Teaching hours(sem.): 0/0/0

### OKTATÁS CÉLJA / AIM OF THE COURSE

Westudythebasicchaptersofmathematicallogicemphasizingonthewiderapplicationoflogicaltools in computing.

### TANTÁRGY TARTALMA / DESCRIPTION

A short

history of mathematical logic

. The subject  
and the goal of logic

. Propositional logic

. Logical values

and operations

. Logical expressions

, tautologies

and truth tables

. Set

-theoretical approach to logic

. Relations between set

-theoretical

and logical operations

. Multi-valued logics

. Fuzzy logic

. Boolean logic versus

fuzzy logic

. The linguistic variable

"Truth

". Evaluating the truth

value of quantified propositions

. Anding the propositions

. Oring the propositions

. Orlike

and andlike OWA operators

. Orness  
and andness  
degrees. Linguisticquantifiers  
.Fuzzy implications  
. The theory of approximate reasoning  
.Fuzzy rule  
-based systems  
. Fuzzy reasoningschemes  
. Knowledge  
-based expertsystems  
. Reasoning methods  
in knowledge  
-based systems  
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Introduction to logic programming  
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## **SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD**

A state-of-the-art survey of a selected topic. The survey should be of 16-20 pages.

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## **KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL**

Smullyan Raymond M., What is the Name of This Book? The Riddle of Dracula and Other Logical Puzzles, Dover Publication Inc., 2011. ISBN 9780486481982

Robert Fullér, [PDF] Neural Fuzzy Systems, Abo Akademi tryckeri, Abo, ESF Series A:443, 1995, 249 pages. [ISBN 951-650-624-0, ISSN 0358-5654]

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## **AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL**