UCLouvain

linfo1116

2026

Logic

5.00 credits	30.0 h + 30.0 h	Q1

Teacher(s)	Piette Eric ;
Language :	French
Place of the course	Louvain-la-Neuve
Learning outcomes	
Evaluation methods	• **Mid-term assessment**: a written test will take place halfway through the semester, covering the first part of the course. This assessment will grant a **bonus** that can be added to the final grade. • **Final exam**: a written exam covering the entire course material. • **Final grade calculation**: The final grade is the weighted average of the final exam (90%) and the mid-term assessment (10%), **provided this average is higher than the final exam grade alone**. Otherwise, only the final exam grade will be taken into account. • **Use of AI tools (e.g. ChatGPT)**: Their use is **strictly prohibited** during the mid-term assessment and the final exam. Throughout the semester, students may use such tools to practice. However, they should do so wisely: these tools must not create the illusion of understanding a method without mastering it. It is therefore **strongly recommended to regularly solve exercises under "exam conditions"**, i.e. without any digital assistance.
Teaching methods	• **Learning through practice and problem-solving**, directly connected to the course topics • **Lectures**: 2 hours per week • **Tutorials / supervised sessions**: 2 hours per week • **Correction of sample exercises** and review of past exam-style questions • **Varied and engaging exercises**, designed to strengthen understanding • **Q&A forum** to support continuous learning • **Feedback on the mid-term assessment**, to identify areas for improvement and better prepare for the final exam
Content	• **Introduction to logic**: truth tables, possible worlds, logical formulas, Boolean models • **Propositional logic**: syntax, semantics, evaluation, satisfaction • **Logical properties**: equivalences, implications, consistency, soundness, completeness • **Logical proofs**: direct proofs, natural deductions, relations, and inductions • **Resolution**: conjunctive normal form (CNF), resolution principle, guided resolution • **Relational logic, terms, and first-order logic** • Introduction to game theory and graphs • **Application to the *Game Description Language* (GDL)**: termination, playability, winnability, structural compliance • **Game analysis through logic**: unification, derivation, reduction
Inline resources	https://moodle.uclouvain.be/course/view.php?id=10180
Bibliography	• Michael Genesereth and Eric J. Kao, "Introduction to Logic", third Edition, 2017, 163 pages, Springer • Michael Genesereth and Viney K. Chaudhri, 'Introduction to Logic Programming", 2020, 200 pages, Springer • Transparents en ligne
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Computer Science	SINF1BA	5		🔍
Minor in Computer Sciences	MINSINF	5		🔍