

# Subject information

**Name:** Logic Foundations of Programming

**Code:** BPI1102

**Semester:** 2023/24/1

**Lecturer:** Grünwald Richárd

**Type:** Theoretical and practical

**Classes/week:** 2+2

**Credit:** 5

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## Thematics

The propositional calculus. Formulas and interpretation of propositional logic. The logical laws in propositional calculus and their applications. Conjunctive and disjunctive normal forms. The concept of logical consequence. The language of the predicate logic. First-order languages, terms, formulas. Free and bound variables, substitution. Semantics. The logical laws in predicate logic and their applications. Prenex and Skolem forms. Predicate calculus, deduction theory. Gentzen systems. Formal axiomatic theories.

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## Requirements

You must obtain an examination grade for the subject, which is available during the examination period. However, it is possible to get an offered grade by taking two optional tests on 19 October 2023 and on 07 December 2023 at the time and place of the practical class. You must score at least 20% on both tests and the average of the two tests must be at least 40%. Thresholds for the average of the optional tests and for the exams:

	–	39%	fail (1)
40%	–	54%	pass (2)
55%	–	69%	satisfactory (3)
70%	–	84%	good (4)
85%	–		excellent (5).

Photo identification is required on site before writing the optional tests or an exam and no aids other than writing utensils are allowed. The tests may differ from the sample test, if any, to any extent.

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## Ethical standards

For all matters not specifically pointed out by the lecturer, the Code of Studies and Examinations of University of Nyíregyháza is authoritative. It should be stressed that this also applies to the rules on absences from practical classes.

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## Recommended literature

1. DIRK VAN DALEN, *Logic and Structure*, 2004.
  2. PETER B. ANDREWS, *An Introduction to Mathematical Logic and Type Theory: To Truth Through Proof*, 2002.
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## Contacts

Inn hour: B241 University of Nyíregyháza, 15:15-16:00 Tuesday

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