GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2025-2026

Logic Programming (C003783)

Course size *(nominal values; actual values may depend on programme)*

Credits 6.0 **Study time 180 h**

Course offerings and teaching methods in academic year 2025-2026

A (semester 2)	Dutch	Gent	seminar
			lecture

Lecturers in academic year 2025-2026

Scholliers, Christophe	WE02	lecturer-in-charge

Offered in the following programmes in 2025-2026	**crdts**	**offering**
Bachelor of Science in Computer Science	6	A

Teaching languages

Dutch

Keywords

Programming languages, Logic programming, Backtracking, Unification, Prolog

Position of the course

The student immerses himself in logical programming paradigms.
It is intended that she / he:
- masters the practical use of a logical programming language;
- masters the concepts, programming techniques and data structures that are common in this paradigm;
- acquires insight into the connections between logic programming, functional programming and object-oriented programming
- gains insight into the underlying evaluation mechanisms of this language

Contents

- taal: SWI Prolog, notions of other logic programming languages
- execution mechanisms: unificatie, backtracking, lazy evaluation
- data structures: graphs, cyclic data structures
- meta interpreters
- forward vs backward chaining
- programming with constraints
- Natural deduction and semantics of predicate logic

(Not all topics will be covered every year)

Initial competences

Being able to program in a functional programming language like Haskell.

Final competences

1 The student understands the syntax and semantics of first-order logic.
2 The student recognizes which logical problems can be tackled with propositional or predicational logic and which can't.
3 The student can write small to mid sized programs is a logical programming language.
4 The student understands the datastructures of the language and can apply them in a project.
5 The student can apply tools for automated reasoning.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Seminar, Lecture

Extra information on the teaching methods

Theory: Lectures, Exercises: Lectures with discussion, Seminar: coached exercises on PC.

Study material

Type: Handbook

Name: Sterling, Leon, and Ehud Y. Shapiro. *The art of Prolog: advanced programming techniques*. MIT press, 1994'
Indicative price: Free or paid by faculty
Optional: yes

Type: Handbook

Name: Clocksin, William F., and Christopher S. Mellish. *Programming in PROLOG*. Springer Science & Business Media, 2003'
Indicative price: € 65
Optional: no

References

Course content-related study coaching

The theory is explained in detail during the lectures. Additional explanations can be obtained when necessary. The seminars and practical exercise sessions are aimed at enhancing the understanding of the theoretical principles. An electronic learning environment supports the communication between students and teachers.
Feedback after the project work allows monitoring of the individual study progress for the course. Lecturer and assistant are available for the student who have questions about the theory or the exercises.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written assessment with open-ended questions

Examination methods in case of periodic assessment during the second examination period

Written assessment with open-ended questions

Examination methods in case of permanent assessment

Oral assessment, Presentation, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

The students are evaluated on a project assignment. Furthermore there is theory-exam which verifies whether the student masters the treated course materials.

Calculation of the examination mark

1st exam: periodic (50%) and permanent (50%) evaluation.

When a student obtains a grade less than 10/20 for either the theory or the project, the total end grade will be maximally the highest failing grade 9/20.
If the student does not pass the non-periodical evaluation, it can be retaken with a new project assignment.