

What is Logic?

Over the centuries, “logic” has been associated with (at least):

- *Philosophy*: valid forms of reasoning and argument
- *Linguistics*: structures in natural language
- *Mathematics*: formal foundations of mathematics
- *Computer Science*: logic = the calculus of computer science

And it doesn't stop there:

- Artificial Intelligence, Cognitive Science, Economic Theory, ...

What is special about Amsterdam is that representatives of all these trends work and teach together in a single institute.

The Master of Logic at the ILLC

The Institute for Logic, Language and Computation (ILLC), a research institute that belongs to both the *Faculty of Science* and the *Faculty of Humanities* at the UvA, has offered the MoL since 1995.

Purpose:

- Basic training for doing *research* ($\sim 75\%$ continue with a PhD)

The I³ approach:

- *Interdisciplinary* vision of logic
- *International*: 25–30 nationalities/ ~ 90 students ($\sim 30\%$ Dutch)
- *Individual* attention: personalised programme + academic mentor

Structure

- 120 ECs overall, over 2 years
- *Tracks*: Logic and Computation (L&C); Logic and Language (L&L); Logic and Mathematics (L&M); Logic and Philosophy (L&P)
- *Obligatory Part*: depends on track
 - *Logic, Language and Computation*
 - *Basic Logic* (if advised to take it)
 - 2–3 track-dependent courses
 - Research project: January/June and/or individual project
- *Free-Choice Part*: determined together with your academic mentor
 - our courses + anything else in NL (subject to mild rules)
 - might include more research projects
- *Thesis*: 30 ECs
- And: must attend at least 10 *seminar* sessions

Courses

Logic, Language & Computation; Basic Logic; Modal Logic; Set Theory; Model Theory; Proof Theory; Recursion Theory; Seminar on Mathematical Logic; Mathematical Structures in Logic; Category Theory & Topos Theory; Homotopy Type Theory; Capita Selecta Modal Logic, Algebra, Coalgebra; Basic Probability, Computing & Statistics; Information Theory; Computational Complexity; Kolmogorov Complexity; Quantum Computing; Cryptography; Combinatorics; Lambda Calculus; Concurrency Theory; Computability & Interaction; Protocol Validation; Functional Specification of Algorithms; Knowledge Representation; Knowledge Representation on the Web; Computational Social Choice; Game Theory; Philosophical Logic; Dynamic Epistemic Logic; Logic, Knowledge & Science; Logic & Metaphysics; Neurophilosophy; Kant, Logic & Cognition; Rationality, Cognition & Reasoning; Logical Methods in Cognitive Science; Neural & Cognitive Modelling; Cognitive Models of Language & Music; Music Cognition; Philosophy of Language; Wittgenstein; Meaning, Reference & Modality; Structures for Semantics; Logic & Conversation; Causality & Explanation; Computational Pragmatics; Natural Language Processing; Unsupervised Language Learning; Bayesian Interpretation; Philosophy of Science; Philosophy of Mathematics; Studies of Mathematical & Logical Practice; And more.

Some of our Recent Graduates

Paula Henk (MoL 2012)

Before: Bachelor Cognitive Science, Osnabrück, 2009

Thesis: *Supremum in the Lattice of Interpretability*

After: PhD Student in Mathematical Logic at the ILLC



Annemieke Reijngoud (MoL 2011)

Before: Bachelor Artificial Intelligence, Utrecht, 2009

Thesis: *Voter Response to Iterated Poll Information*

After: Consultant with McKinsey & Company

Fabio Zanasi (MoL 2012)

Before: Bachelor Philosophy, Siena, 2010

Thesis: *Monadic Second Order Logics on Infinite Trees*

After: PhD Student in Computer Science at ENS Lyon



Career Opportunities

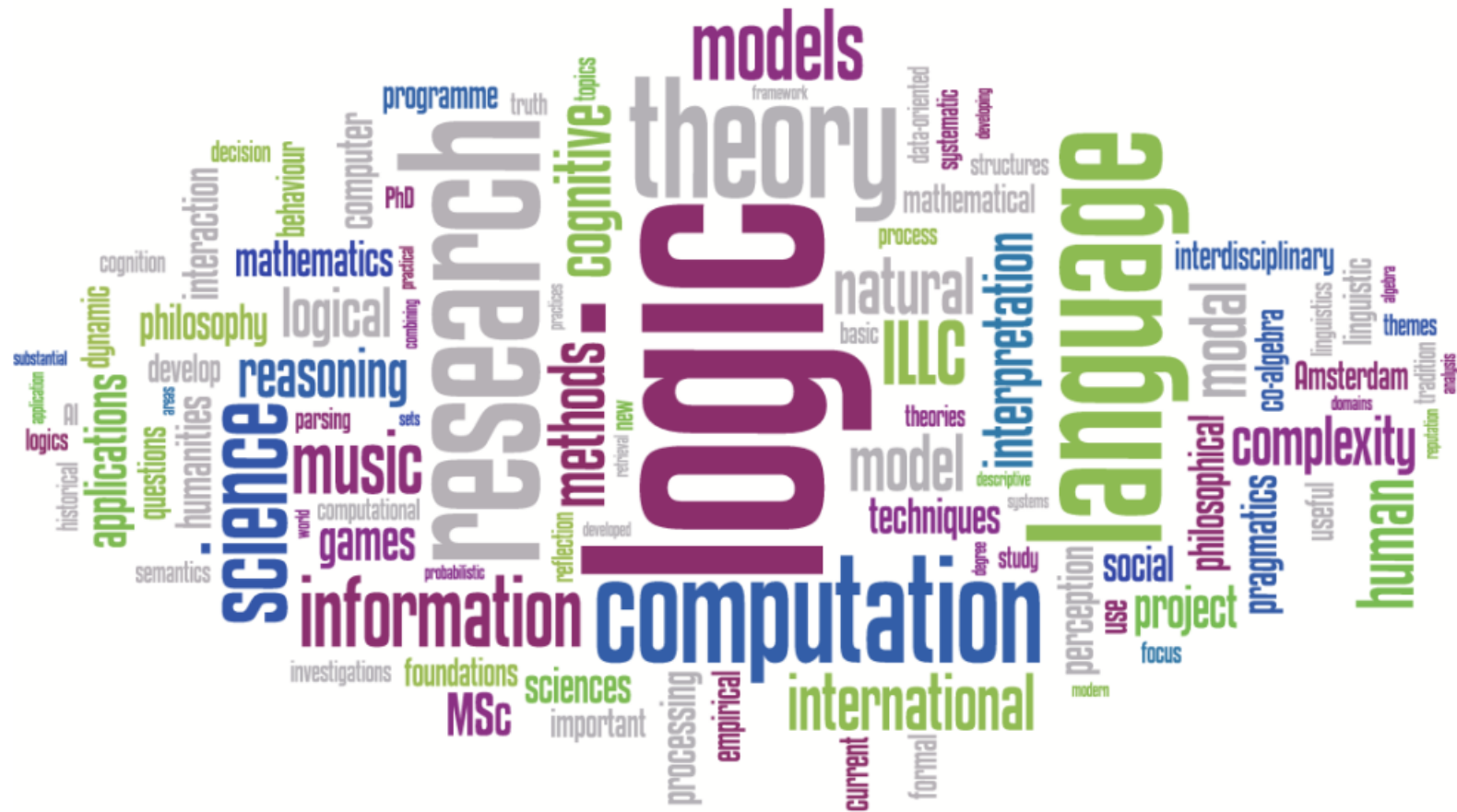
- Academic research: around 75% of our graduates continue in academia and get a PhD degree.

Excellent placement record, with recent destinations including: Stanford, Berkeley, CUNY, NYU, UCSD, Oxford, Cambridge, LSE, St. Andrews, CWI, most Dutch universities, . . .

- Similar opportunities as Computer Science/IT graduates: e.g., software engineering
- Other: e.g., management and technology consulting

Selective MSc Programme

- Personalised Application Procedure
- Application:
 - Application form available at our website
<http://www.illc.uva.nl/MScLogic/application/>
 - Transcript of courses and grades
 - Letters of Recommendation
 - Letter of Motivation
- Basic criteria:
 - Relevant Bachelor's degree
 - Adequate background in logic (up to completeness of FOL)
 - Academic excellence (e.g., *cum laude* in the Dutch system)
- Deadline: **1 April 2015** (for European applicants)
- You don't need a BSc/BA to apply, but you do need one to enroll.
- Central question: is logic what you *want* to do?



To find out more:

<http://www.illc.uva.nl/MScLogic/>