

NASSLLI 2014: Philosophical Logic Bootcamp

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Session 1. Classical First-Order Logic and Advanced Quantifiers

Saturday 1:00pm-3:00pm

In our first session, we begin by reviewing the model theory of classical first-order logic. We then move beyond the standard existential \exists and universal \forall quantifiers and consider generalized quantifiers, substitutional quantifiers, and plural quantification.

Session 2. Recursion Theory, Gödel's Incompleteness Theorems, and Nonfirstorderizability

Saturday 3:00pm-5:00pm

In our second session, we begin by reviewing basic concepts in recursion or computability theory. We then use this technical machinery to prove Gödel's First and Second Incompleteness Theorems. We conclude with a nice application of incompleteness: proving that certain natural language sentences are inexpressible in first-order logic.

Session 3. Modal Logic and Its Applications

Sunday 9:30am-12:30pm

In our third session, we investigate the theory of propositional modal logic, considering its syntax, semantics, and proof theory. We then consider a few applications of this theory: temporal logic, counterfactuals, deontic logic, and epistemic logic.

Session 4. Logical Consequence and Non-Classical Logics

Sunday 1:30pm-5:30pm

In our fourth and final session, we get a bit more philosophical and ask: what is logical consequence? In the course of answering this question, we consider various kinds of non-classical logics, including intuitionistic logic, relevance logic, fuzzy logic, and quantum logic.