SF2736, Discrete mathematics, autumn 2015 Wed 16 December

Twenty-sixth lecture

# • SOME MORE ON LOGIC

## Semantic consequence $\Gamma \vDash p$

### Formal proofs $\Gamma \vdash p$

natural deduction

## Gödel's completeness theorem

#### Some axiom systems

groups, ordered sets, graphs Peano's axioms sets (Zermelo-Fraenkel)

#### Theories

consistency, completeness, axiomatizability

## Gödel's incompleteness theorem

## The compactness theorem

limitations (non-standard models)