First Half

• Basics: The λ-calculus
• Types & type safety
  • Substitution & Canonical Forms
  • Preservation & Progress
• Data representation (x, 1, +, ρ)
• Functional computation (→, &)
• Exceptions
Second Half

- The Curry-Howard correspondence (propositions as types, proofs as programs)
- Richer types and stronger properties
  - Parametric polymorphism and data abstraction (∀, ∃)
  - Linearity and accounting for resources (no garbage, messages) (⊗, 1, ⊕, ρ, &, →)
- Different models of computation
  - K machine: from global to local, continuations
  - Concurrency: multi-local (shared memory or message-passing)
  - Mutable memory