

Final Exam

Friday, 10 May, 11 am - 1 pm, Gould-Simpson Room 701.

Format

- Open notes; open texts.
- Bring your copy of the Watt chapters on semantics for reference
- Answers written in exam booklet
- 4 short problems and 2 long problems
- "short" (10 min) problems: 12 points each
- "long" (20 min) problems: 26 points each
- Point value is approximately number of minutes to solve problem

Topics

The following is a list of categories from which problems are taken. The final exam will contain problems chosen from this set.

binding mechanisms/parameter passing
aliasing: kinds and how they arise
binding times/environments/free name binding
definitions of terms and concepts
direct denotational semantics of commands and expressions with side-effect
semantics of imperative control structures
continuation semantics of simple commands and expressions
declaration semantics (no declaration continuations)
scope and dangling pointers
fixed points; calculating and verifying
computation rules
unusual control structures: implementation
static vs dynamic binding
strong typing/binding time of types
implementation of block structured language features
functional programming languages
lambda calculus/combinators/reductions/normal forms
assignment and references: box & arrow diagrams
activation record management/pointer diagrams