

# CSE 341: Programming Languages

Spring 2007

Lecture 30 — Final Review

Exam: Wednesday June 6, 8:30-10:20 AM

# General

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Comprehensive — Re-review Midterm topics list

But some emphasis on topics since midterm & unifying concepts

Review homework solutions, too

Closed book, closed notes

Similar format to midterm: T/F, short answer, compare/contrast, read & evaluate code, write code

# Scheme

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- Basics: syntax, evaluation, special forms (define, lambda, conditionals, let)
- Binding forms (define, parameters, let and its variations)
- Parameter passing mechanisms: call-by-value, call-by-name, call-by-need (lazy evaluation)
- Use of closures to realize thunks, delayed evaluation
- Implementation strategies: basic difference between compilers and interpreters
- Scheme implementation: environments, eval/apply, using closures to implement higher-order functions
- Functions vs macros

# Ruby

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- Basics: concepts and vocabulary including syntax, messages, classes and methods, blocks (closures) and iterators, `self` and `super`, everything is an object
- Name resolution, dynamic dispatch (meaning and basic implementation ideas), late binding

# Overall

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- Recursion & iteration
- First class functions; closures
- Higher-order functions & functional programming (map, fold, etc.)
- Type system design and tradeoffs; static vs. dynamic typing
- Side-effects; evaluation order
- Garbage collection

# Course Evals

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Please include “Additional Items” on back side of mark-sense form.

Yellow sheets come to me (after grades are turned in). Comments on all aspects of course are welcome—books, lectures, TAs, homework, etc.

General Glowing Praise for your instructor is always especially welcome...

Thanks and Good Luck on the Final!