

# CSE 341: Programming Languages

Spring 2007  
Lecture 15 — Midterm Review

# Midterm Topics

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The following are the major topics that will be covered in the CSE 341 midterm exam.

- Basic SML concepts such as bindings, expressions (including conditionals), functions
- Syntax, semantics, types, and evaluation
- Basic types in SML: tuples, records, lists, options
- Let expressions and other bindings; scope
- User defined types: (datatype) and type synonyms (type)
- Pattern matching, both in case expressions and function definitions; deep patterns
- Recursion, tail recursion (including accumulators), and mutual recursion

# Midterm Topics (cont.)

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- Higher order functions including key idioms (map, fold, filter), types for higher-order functions
- Currying and partial evaluation
- Type inference and polymorphism
- Function closures and environments
- Uses of closures, e.g., for Abstract Data Types
- Notions and types of program equivalence; syntactic sugar, functional equivalence (renaming, substitution, capture)