

# Review Topics for CS210 Final

Syntax vs semantics

Describing syntax, context-free grammars, syntax

BNF, EBNF

Ambiguous grammars

Parsing

Parse trees

Top-down (recursive descent) parsing, bottom up parsing

Use of lex, yacc

Regular expressions

Naming

Binding - binding times, static vs dynamic binding

Scope

Lifetime

Heap vs stack implementation

Declaration, definition, initialization, instantiation

Data types, primitive vs constructed

Strings and their implementation

Arrays, subscripted, associative, how stored

Records, structs, unions

Tuples, lists

Pointers

Type checking, type inference, type coercion

Operators, expressions, associativity

Side effects

Overloaded operators

Control structures, decision, selection, iterative

Subprograms

Parameters, passing methods

Variable scope, lifetimes, local vs global

Functions vs methods

Subprogram implementation, activation records, stack frames

Recursion

Abstract data types – the concept

Encapsulation

Information Hiding

Object-oriented programming

Inheritance

Instantiation

Static vs dynamic binding

Object scope – private, public, protected, friend

Object binding

Functional programming languages

Lambda expressions

ML