

CS 311—Theory and Implementation of Programming Languages

Fall 2009

Catalog Data: Prerequisite: CS220 with a grade of C or better. Introduction to the theory of programming languages and their implementation. Basics of finite automata, regular grammars, lexical analysis, parsing, syntax-directed translation, and semantic analysis. Specification of binding variables, data types, static and dynamic scope, subprograms, abstraction, and concurrency. Study of object-oriented, functional, and logic programming languages. Lab work is an essential component of this course.

Textbooks: The concepts of Programming Languages, Ninth Edition, By: Robert W. Sebesta

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Office Hours: T, W, Th: 1:30pm to 3:30pm

Main topics:

- Preliminaries
- Describing Syntax and Semantics
- Lexical and Syntax Analysis
- Names, Binding, Type Checking, and Scopes
- Expressions and Assignment Statements
- Subprograms and their Implementation
- Abstract Data Types and Encapsulation
- Introduction to Functional Programming
- Introduction to Expert Systems

Grading: Test1: 20%, Test2: 20%, Test3: 25%
Homework and Quizzes: 25%
Attendance and Participation: 10%
NOTE: These percentages are tentative; there may be significant changes.

Grading Scale: A = 90-100, B = 80-89, C = 70-79, D = 60-69, F < 60.

Missing Exams: If you should miss an exam (not including quizzes), you must let me know before the exam. You may call me, send me E-mail, or come by my office to inform me. If the excuse is reasonable, I will replace your exam score with your final exam percentage.

Attendance: I strongly encourage regular attendance in my classes and will take attendance at the beginning of each class. You are responsible for all announcements and for all material presented in the lecture sessions.

Turning in work: Turn in your work on time. Your works should be turned in before I start the class.

Final Notes:

- 1) Personal laptops and cell phones are not allowed to be used in the class.
- 2) During the lab sessions, computers should be only used for doing the lab assignments and reading class materials.