CS305 – Programming Languages
2020-2021 Spring

Syllabus

Instructor: Hüsnü Yenigün
TAs: Mohammad Yusaf Azimi, Ceren Yıldırım
Lectures: Tuesday 16:40-17:30, Wednesday 10:40-12:30
[Lectures will be at https://sabanciuniv.zoom.us/j/94470352099]
Office Hours: Hüsnü Yenigün   (TBA – by appointment until scheduled)
Mohammad Yusaf Azimi   (TBA – by appointment until scheduled)
Ceren Yıldırım   (TBA – by appointment until scheduled)
[All office hours will be at https://sabanciuniv.zoom.us/j/95089484012]

Textbooks
[1] "Programming Languages: Concepts and Constructs" by Ravi Sethi
[2] "Concepts of Programming Languages" by Robert W. Sebesta
[3] "Comparative Programming Languages" by Leslie B. Wilson and Robert G. Clark
[4] "Programming Languages: Principles and Paradigms" by Allen Tucker and Robert Noonan
[5] "Essentials of Programming Languages" by Daniel Friedman, Mitchell Wand, and
Christopher T. Haynes

Note: A lecture notes document prepared based on the references above will be provided.

Grading
- Midterm 1   (20%) Date: …………………………………
- Midterm 2   (20%) Date: …………………………………
- Final   (20%) Date: …………………………………
- Quiz   (10%) Date: …………………………………
   o worst 20% dropped
   o no make-up
   o 0 for missed quizzes
- Make-up   Date: ………………………………… [after the final exam]
   o Policy: If you miss *exactly* one of the midterm or final exam, and if you have a
     valid excuse (e.g. a medical condition, an official university event participation,
     etc.), then you can take the make-up exam. In this case, the grade of the make-up
     exam counted as the grade of your missing exam. The make-up exam can be an
     oral exam, a written exam, or both.
- Homeworks   (30%) 5-7 homeworks (mostly programming homeworks)

Tentative Outline

Week 01: Introduction, Describing Syntax and Semantics of Programming Languages

Week 02: Flex and Scanner Implementation

Week 03: Context Free Grammars

Week 04: Bison and Parser Implementation

Week 05: Abstract Syntax Trees, Semantic Analysis

MIDTERM 1

Week 06: Expressions, Types and Type Checking, Statements, Scoping Rules

Week 07: Subprograms – Referencing Environments, Parameter Passing

Week 08: Subprograms – Activation Records

Week 09: Functional Programming – Expressions, Procedures

MIDTERM 2

Week 10: Functional Programming – Data types

Week 11: Functional Programming – Interpreters

Week 12: Logic Programming (Relations, Rules/Facts, Inferencing, Unifications, Programming Techniques)

Week 13: Parallel Programming

FINAL