

CS305 – Programming Languages

2021-2022 Fall

Syllabus

Instructor:	Hüsnü Yenigün	
TAs:	Mohammad Yusaf Azimi	(azimi@sabanciuniv.edu)
	Ceren Yıldırım	(cerenyildirim@sabanciuniv.edu)
LA:	Giray Coşkun	(giraycoskun@sabanciuniv.edu)
Lectures:	Monday	11:40-13:30 [PAC & Online]
	Friday	09:40-10:30 [FENS G077 & Online]
Office Hours:	Hüsnü Yenigün	Tuesday 09:40-10:30, 12:40-13:30 [Online]
	Mohammad Yusaf Azimi	Monday 18:40-20:30 [Online]
	Ceren Yıldırım	Thursday 09:40-11:30 [Online]
	Giray Coşkun	Thursday 11:40-13:30 [Online]

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: October 26, 2021 Tuesday 20:00-21:30
- Midterm 2 (20%) Date: November 25, 2021 Thursday 20:00-21:30
- Final (30%) Date: TBA by SR
- Make-up Date: TBA [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

Week 13: Logic Programming – Unifications, Programming Techniques

Week 14: Parallel Programming

FINAL