

# BIL395 Programming Languages

Syllabus

2022-2023 Spring

- COURSE
- ◇ Instructor: Dr. Osman Abul, E-mail: `osmanabul AT etu.edu.tr`, Office:136  
Office Hours: TBD
  - ◇ Lecture hours: TBD
  - ◇ Teaching assistant: TBD
  - ◇ Course website: **Piazza**, **Moodle**

- DESCRIPTION
- ◇ **Content:** Language categories, Language design, Programming languages evolution, Syntax, Semantics, Lexical and syntax analyzers, Names, Bindings, Type checking, Scoping, Data types, Expressions, Statements, Statement-level control structures, Subprograms, Abstract data types, Functional programming languages, Logic programming languages.
  - ◇ **Objective:**
    - To teach fundamental concepts underlying all programming languages.
    - To teach main paradigms of programming languages.
    - To make students acquaintance with how the concepts are handled in major programming languages.
    - Be able to use language processors for language design and implementation.

- MATERIAL
- ◇ Textbook  
*Concepts of Programming Languages*, 10th Edition, Robert W. Sebesta, Addison-Wesley, 2013.
  - ◇ References
    1. *Compilers: Principles, Techniques, and Tools*, Alfred V. Aho, Monica S. Lam, Ravi Sethi, Jeffrey D. Ullman, Addison-Wesley.
    2. *Programming Language Concepts and Paradigms*, David Watt, Prentice Hall.
    3. *Comparative Programming Languages*, Leslie B. Wilson, Robert G. Clark, Addison-Wesley.

SCHEDULE

Week	Topic	Book chapter	Note
1	Introduction, Preliminaries, and History	1, 2	
2	Syntax and Semantics	3	
3	Lexical and Syntax Analysis	4	
4	Names, Bindings, Type checking, and Scoping	5	
5	Data types	6	
6	Expressions and Assignment statements	7	
7	Statement Level Control Structures	8	
8	Subprograms	9	
9	Implementing Subprograms	9, 10	
10	Abstract Data Types	11	
11	Functional Programming Languages	15	<i>Lisp</i>
12	Logic Programming Languages	16	<i>Prolog</i>

- GRADING
- Midterm (30%), Assignments (20%), Final (50%).