Syllabus of CS 315 - Programming Languages

Department: Computer Engineering

Credits: Bilkent 3, ECTS 5

Course Coordinator: H. Altay Güvenir

Semester: 2020-2021 Fall

Contact Hours: 3 hours of lecture per week

Textbook and Other Required Material:

- Required - Textbook: Concepts of Programming Languages, Robert W. Sebesta, 10th Edition, Pearson [download]

Catalog Description:
Language evaluation criteria. Describing syntax and semantics. Tools for constructing lexical and syntactical analyzers. Names, bindings, type checking, and scopes. Data types. Expressions and the assignment statement. Statement-level control structures. Subprograms. Abstract data types. Concurrency. Exception handling. Functional programming languages. Logic programming languages.

Prerequisite(s): CS 201

Assessment Methods:

	Type	Label	Count	Total Contribution
1	Midterm:Open-Book		1	20
2	Term project	There are 2 projects	1	20
3	Quiz	There are at least 5 quizzes	1	15
4	Homework	There are 3 homeworks	1	15
5	Final:Open-book		1	30

Minimum Requirements to Qualify for the Final Exam:
At least 20% on the midterm exam, AND 20% on the project, AND 20% on the average of homework assignments.

Course Learning Outcomes:

Course Learning Outcome	Assessment	Program Outcome (if any)
Design and implement a software system to meet desired needs	There are 2 projects	(c)
Solve engineering problems related to computer systems and applications	Final:Open-book	(e)
Write programs in new programming languages	There are 3 homeworks	(k)

Weekly Syllabus:

1. Preliminaries, syntax, semantics
2. Describing Syntax (Regular Expressions & Context Free Grammars)
3. Lexical Analysis and Parsing
4. Parser generator tools (Lex & Yacc)
5. Names, Bindings, and Scopes

6. Names, Bindings, and Scopes
7. Data Types
8. Data Types
9. Expressions and Assignment Statement, Statement-Level Control Structures
10. Subprograms
11. Implementation of Subprograms
12. Concurrency, Exception Handling and Event Handling
13. Functional programming
14. Logic programming

ECTS - Workload Table:

Activities	Number	Hours	Workload
Preparation for Midterm exam	1	15	15
Project (including preparation and presentation if applicable)	2	20	40
Course hours	14	3	42
Final exam	1	2,5	2.5
Homework	3	8	24
Midterm exam	1	2	2
Preparation for Final exam	1	30	30
Total Workload:			155.5
Total Workload / 30:			155.5 / 30
			5.18
ECTS Credits of the Course:			5

Type of Course: Lecture - Project

Course Material: PC - Written

Teaching Methods: Lecture