

— Plano de Ensino 2022.2 —

Código	DCC024
Disciplina	Linguagens de Programação
Turma	CC
Professor	Haniel Barbosa
Horário	2a/4a 13:00-14:40
Sala	2013, ICEx

Ementa. The purpose of this course is to study fundamentals concepts in programming languages and major tools and techniques to implement them. This includes a number of programming paradigms, namely: functional, imperative, and logic, as well as general aspects such as syntax specification and informal semantic models; binding and scoping; types and type systems; control structures; data abstraction; procedural abstraction and parameter passing; higher-order functions; and memory management. The course has a strong implementation component, with three languages being covered: SML, Python, and Prolog. No prior familiarity with these languages is assumed in this course. Learning them will have the secondary effect of exposing students to the different programming paradigms.

Programa.

Class	Date	Content
1	13/03 (Mon)	Course Introduction SML Introduction
2	15/03 (Wed)	Pattern Matching in SML
3	20/03 (Mon)	ADTs in SML
4	22/03 (Wed)	Polymorphism
5	27/03 (Mon)	Higher-Order Functions & Combinators
6	29/03 (Wed)	Syntax and Semantics (Part 1)
7	03/04 (Mon)	Syntax and Semantics (Part 2)
8	05/04 (Wed)	Bindings and scope
9	10/04 (Mon)	Closures
10	12/04 (Wed)	Formal Semantics: Operational Semantics
11	17/04 (Mon)	Program Equivalence as SMT
12	19/04 (Wed)	Formal Semantics: λ -calculus
13	24/04 (Mon)	Exam 1
14	26/04 (Wed)	Python Introduction (async)
–	01/05 (Mon)	No class
–	03/05 (Wed)	<i>Project out</i>
15	03/05 (Wed)	Activation Records
16	08/05 (Mon)	Memory Management (Part 1)
17	10/05 (Wed)	Memory Management (Part 2)
18	15/05 (Mon)	<i>Project tutorial</i>
19	17/05 (Wed)	Abstract Data Types
20	22/05 (Mon)	Object Orientation
21	24/05 (Wed)	Error Handling
22	29/05 (Mon)	Parameter Passing (Part 1)
23	31/05 (Wed)	Parameter Passing (Part 2)
24	05/06 (Mon)	Prolog Introduction
25	07/06 (Wed)	Unification and Resolution
26	12/06 (Mon)	Numeric Predicates in Prolog
27	14/06 (Wed)	Problem solving (Part 1)
28	19/06 (Mon)	Problem solving (Part 2)
29	21/06 (Wed)	Exam 2

	–	26/06 (Mon)	<i>Project due</i>
30		26/06 (Mon)	Make-up exam
	–	28/06 (Wed)	No class
	–	03/07 (Mon)	No class
	–	05/07 (Wed)	Special exam

Bibliografia. Modern Programming Languages: A Practical Introduction, by Adam Webber.

Material de apoio. <https://hanielb.github.io/2023.1-1p/>

Avaliações.

Prova 1	30	24/04
Prova 2	30	21/06
Projeto	30	26/12
Listas de exercício	10	
