— Plano de Ensino 2022.2 —

Código	DCC024
Disciplina	Linguagens de Programação
Turma	SI
Professor	Haniel Barbosa
Horário	2a/4a 19:00-20:40
Sala	2010, 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	Category
1	22/08 (Mon)	Course Introduction & Overview	
2	24/08 (Wed)	SML Introduction	
3	29/08 (Mon)	Pattern Matching in SML	
4	31/08 (Wed)	ADTs in SML	
5	05/09 (Mon)	Polymorphism (via Zoom)	
-	12/09 (Mon)	No class	
6	14/09 (Wed)	Higher-Order Functions & Combinators	
7	19/09 (Mon)	Syntax and Semantics (Part 1)	
8	21/09 (Wed)	Syntax and Semantics (Part 2)	
9	26/09 (Mon)	Bindings and scope	
10	28/09 (Wed)	Closures	
11	03/10 (Mon)	Formal Semantics: Operational Semantics	
12	05/10 (Wed)	Program Equivalence as SMT	
–	05/10 (Wed)	*Project 1 out*	
13	10/10 (Mon)	Formal Semantics: λ-calculus	
14	15/10 (Sat)	Revision on Formal languages	
15	17/10 (Mon)	**Exam 1**	
16	19/10 (Wed)	*Tutorial Project 1*	
17	22/10 (Sat)	Python Introduction (async)	
18	24/10 (Mon)	Memory Management (Part 1)	
19	26/10 (Wed)	Memory Management (Part 2)	
20	31/10 (Mon)	Abstraction, Abstract Data Types and Object Orientation	
–	31/10 (Mon)	*Project 2 out*	
–	06/11 (Sun)	*Project 1 due*	
21	07/11 (Mon)	Error Handling	
22	09/11 (Wed)	Parameter Passing	
23	12/11 (Sat)	*Tutorial Project 2*	
24	14/11 (Mon)	Prolog Introduction	
25	16/11 (Wed)	Unification and Resolution	
26	21/11 (Mon)	Numeric Predicates in Prolog	
27	23/11 (Wed)	**Exam 2**	

28	28/11 (Mon)	Problem solving with Prolog (async)
29	30/11 (Wed)	**Make-up exam**
–	04/12 (Sun)	*Project 2 due*
30	05/12 (Mon)	Problem solving with Prolog (async)

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

Material de apoio. `https://homepages.dcc.ufmg.br/~hbarbosa/teaching/ufmg/2022-2/lp/`

Avaliações.

1	Prova 1	25	17/10
2	Prova 2	30	23/11
3	Projeto 1	15	06/11
3	Projeto 2	20	04/12
4	Listas de exercício	10	