

— Plano de Ensino 2026.2 —

Código	DCC831
Disciplina	Theory and Practice of SMT solving
Turma	...
Professor	Haniel Barbosa
Horário	2a/4a 17:00-18:40
Sala	ICEx 2014

Ementa.

- Satisfiability Modulo Theories
- CDCL(T) architecture
- Theory solvers
- Quantifiers
- Proofs
- State-of-the-art review

Programa.

Class	Date	Content
–	03/08 (Mon)	No class
–	05/08 (Wed)	No class
1	10/08 (Mon)	Intro to SMT / CDCL(T) architecture
2	12/08 (Wed)	Propositional Logic, DPLL
3	17/08 (Mon)	CDCL
4	19/08 (Wed)	SAT solving
5	24/08 (Mon)	SAT simplification techniques
6	26/08 (Wed)	First-order logic
7	31/08 (Mon)	CDCL(T)
8	02/09 (Wed)	Theory solvers: EUF
–	07/09 (Mon)	Holiday: Independência do Brasil
9	09/09 (Wed)	Theory solvers: Difference Logic, Arrays
10	14/09 (Mon)	Theory solvers: Arithmetic
11	16/09 (Wed)	Exam 1
12	21/09 (Mon)	Theory solvers: Arithmetic
13	23/09 (Wed)	SMT simplification techniques
14	28/09 (Mon)	Quantifiers
15	30/09 (Wed)	Quantifiers
16	05/10 (Mon)	Proofs
17	07/10 (Wed)	Proofs
–	12/10 (Mon)	Holiday: Padroeira do Brasil
18	14/10 (Wed)	Project check-in
19	19/10 (Mon)	Project check-in
20	21/10 (Wed)	Project check-in
21	26/10 (Mon)	Project check-in
–	28/10 (Wed)	Holiday: Dia do Servidor Público
–	02/11 (Mon)	Holiday: Finados

22	04/11 (Wed)	Theory solvers: Bit-vectors
23	09/11 (Mon)	Theory solvers: Bit-vectors
24	11/11 (Wed)	Theory solvers: Strings
25	16/11 (Mon)	Theory solvers: Strings
26	18/11 (Wed)	Exam 2
27	23/11 (Mon)	Seminars
28	25/11 (Wed)	Seminars
29	30/11 (Mon)	Seminars
30	02/12 (Wed)	Seminars

Bibliografia. A disciplina não possui um livro-texto. Diversos materiais de leitura, entre notas de aula, tutoriais, capítulos de livros e artigos, serão passados durante o semestre e serão disponibilizados na página da disciplina.

- Decision Procedures: An Algorithmic Point of View by Daniel Kroening and Ofer Strichman
- The Calculus of Computation: Decision Procedures with Applications to Verification, an authoritative textbook by Aaron R. Bradley and Zohar Manna
- Handbook of Satisfiability edited by Armin Biere, Marijn Heule, Hans van Maaren and Toby Walsh
- A Mathematical Introduction to Logic by Herbert B. Enderton (online version).

Avaliações.

1	Exam 1	30%	18/11
2	Exam 2	30%	13/01
3	Project	25%	
4	Seminars	15%	
