



Spring 2022

Lecturer: Dr. Oğuz Altun

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Office: D036

Office Hours: Tuesday 12:00-13:00

» **Course: BLM 2502 The theory of Computation**

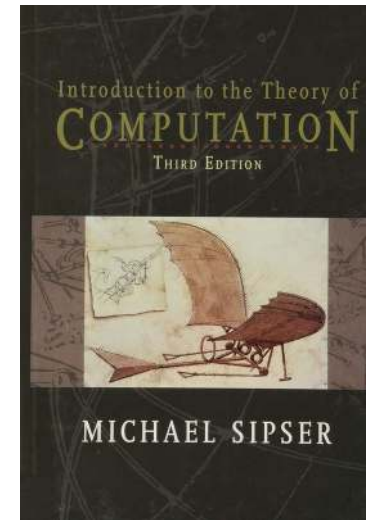
> **Tuesday 09:00-12:00**

> **ECTS 3 credits**

# BLM2502 Theory of Computation

## » Book

- > Michael Sipser, Introduction to the Theory of Computation (3E), Thomson
- > No handouts, its your responsibility to take notes.



- > Lectures from the author:

<https://ocw.mit.edu/courses/mathematics/18-404j-theory-of-computation-fall-2020/>

» **Course Goals:**

- » To introduce fundamental theoretical concepts for the computational complexity of algorithmic problems, and also to introduce basic techniques used for lexical analysis and syntax parsing in programming languages.

» **Main Topics Covered:**

» Finite Automata

- Deterministic and nondeterministic finite automata
- Regular expressions

» Pushdown Automata

- Context-free languages and grammars
- Parsing

» Turing Machines

- Turing recognizable languages
- Decidability
- Time and Space complexity
- NP-completeness

## » **Grading:**

- » Homework assignments: 15%
- » Pop-up quizzes (~8 quizzes): 15%
- » Midterm: 30%
- » Final: 40%