



UNIVERSITÄT  
DES  
SAARLANDES



## Welcome and Organization

Algorithms for Sequence Analysis

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Chair for Algorithmic Bioinformatics  
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# Course organization

- Language: **English**
- Credits: **9 ECTS**
- **Two lectures** and **one exercise** per week (4V+2Ü)
- Lecture times are **Tuesday 12:30–14:00** and **Thursday 08:30–10:00**.

# Exercises and Assignments

- **Tutors:** myself
- Assignments will be posted each **Tuesday**, starting April 20.
- Some assignments will be for two weeks (mostly programming).
- Some tasks will be **theory tasks** and some tasks will be **programming tasks**.
- To be **eligible for the exam**, you need
  - 50% of all points from theory tasks, and
  - 50% of all points from programming tasks.
- You can work in **groups of two students**; larger teams are not allowed.
- Do not plagiarize or copy solutions (zero points for anyone involved) !

# Exam

- 50% of programming points and 50% of theoretical exercises are necessary to take the exam.
- Oral exam at the end of semester (20 minutes each).
- Each slide set comes with example exam questions. These are not exhaustive!

# Topic Overview

- 1 Exact pattern matching
- 2 Index structures (suffix trees, suffix arrays, FM index, etc.)
- 3 Sequence assembly
- 4 Min hashing
- 5 Pairwise alignment
- 6 Multiple alignment
- 7 Sequence-labeled graphs
- 8 Compression
- 9 Approximate matching
- 10 Positional Burrows-Wheeler transform

# Recommended Literature

## Available in Course Management System

- Slides + Recordings
- Lecture Notes (later)

## Books

