ALGORITHMIC GEOMETRY SUMMER 2015

LVR number:	150 341
Event:	Algorithmic geometry 2 hours NA 1/64 Mon 12.00-14.00
lecturer:	Maike Buchin
exercises:	Stef Sijben 2 hours NA 2/24 Fr 12.00 - 14.00 The first exercise takes place on 17.04. instead of.
Registration for the lecture:	Moodle until 17.04.

NEWS

The first **lecture** will be on **Friday, 10.04.** from 12 to 14 o'clock in NA 2/24.

COMMENT

Algorithmic geometry deals with the design and analysis of algorithms and data structures for geometric problems. In the lecture the following fundamental problems are considered: How to calculate the convex hull of a set of points? How do you find the intersections of a lot of routes? How do you triangulate a polygon? Furthermore, geometric data structures such as range trees, Voronoi diagrams, Delaunay triangulations, arrangements, and quadtrees are considered. Different types of algorithms are used: incremental, divide-and-conquer, and sweep. In particular, we consider randomized algorithms.

REQUIREMENTS

Basic knowledge of algorithms and data structures is expected as well as basic knowledge of stochastics.

LITERATURE

The lecture is mainly based on the book "Computational Geometry: Algorithms and Applications", by Mark de Berg, Otfried Cheong, Marc van Kreveld, and Mark Overmars (3rd edition, 2008, Springer).

MATERIALS

The materials will be published in the associated Moodle course .

EXAMS

The exam performance of the module Algorithmic Geometry has to be done in the form of an oral exam.

The examination registration takes place according to the rules of the examination office responsible for you.

The oral exams will be held for students of mathematics on Tuesday, 21.07. and on Tuesday, 20.10. occur. For students of AI, the dates are on 21.07. and on 23.9. to disposal. Please let Stef Sijben give you a time before registering for the exam .

CONTACT

Maike Buchin , NA 1/70
Stef Sijben , NA 1/71