EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Preparatory Course for the new Master Mathematical Physics Student 2019

30th September - 11th October, 2019

Schedule

Monday - Friday	9:30 - 12:00 - *Lecture* in C4H33
	14:00 - 17:00 - *Exercise class and individual coaching* in C4H33

Special dates

30th September	9:30 - 10:00 - *Welcome session* in C4H33
2nd October	Starting at 19:00 - *Get-together* in C4H33
3rd October	University closed due to public holiday
10th October	14:15 - 15:30 - *Official welcome of the new students*
	Starting at 15:30 - *Welcome reception with coffee, tea and cakes* C4H43

Contents

The aim of the course is to give an overview of basic tools in real analysis, measure theory and classical mechanics. First, we recall fundamental notions about topological and metric spaces. We introduce measure spaces and the concept of measurable function. We focus in particular on Lebesgue measure and Lebesgue spaces. Then, we provide an introduction to Fourier analysis on d-dimensional torus and on $\mathbb{R}^d$ (main properties and some applications to linear differential equations) and basic notions on Newtonian, Lagrangian and Hamiltonian mechanics (mathematical formalism to introduce the Newton's laws of motion, Euler-Lagrange equations and Hamilton's equations, guiding physical ideas behind them and some examples).

Venue

All the lectures and the events will be held at the Department of Mathematics (Auf der Morgenstelle 10, C-Building, Tübingen). Rooms C4H33 and C4H43 are on 4th floor of C-Building.

Contact

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