

Fact-sheet reaction-diffusion equations

Wintersemester 2020/2021

Prof. Dr. A. Marciniak-Czochra, Chris Kowall

http://www.biostruct.uni-hd.de/folder_teaching/LectureReactionDiffusion.php

Lecture: RDE: From semigroup theory to pattern formation.

Tuesday 11:15-12:45 (online),

Thursday 11:15-12:45 (online).

Due to the current situation, the semester will be organized online. Lectures will be streamed live on Microsoft Teams during the regular lecture time.

Please send an email to Chris Kowall (kowall@math.uni-heidelberg.de) which includes your mail address for registration at Microsoft Teams, preferably your uni-heidelberg.de account.

First lecture on 3.11.2020. There will be a break from 19.12.2020 until 10.01.2021.

Homepage: Current information can be found [online](#).

Tutorials: Every two weeks there is a discussion session on Wednesday 9:15-10:45. It is also organized via Microsoft Teams, in the same channel as the lecture. The aim of the discussion session is to answer your questions arising during the lecture and to present further examples. Please register on [Müsli](#).

First discussion session around 17.11.2020.

Exam: There will be an oral exam at the end of the semester, i.e., at the end of February/begin of March. A registration at Müsli is mandatory (by 10.01.2021 at the latest). Furthermore, please take an active part in discussion sessions.

Contact: In case of questions concerning the course, please contact your tutor Chris Kowall or feel encouraged to ask during or past the lecture.

Prof. Dr. A. Marciniak-Czochra (anna.marciniak@iwr.uni-heidelberg.de)

Chris Kowall (kowall@math.uni-heidelberg.de)

Literature: There are various books concerning semigroup theory and applications such as reaction-diffusion equations.

- H. Brezis: Functional Analysis, Sobolev Spaces and Partial Differential Equations
- K.-J. Engel, R. Nagel: One-Parameter Semigroups for Linear Evolution Equations
- A. Pazy: Semigroups of Linear Operators and Applications to Partial Differential Equations
- A. Yagi: Abstract Parabolic Evolution Equations and their Applications
- D. Henry: Geometric Theory of Semilinear Parabolic Equations
- J. Smoller: Shock Waves and Reaction-Diffusion Equations