

**621.741 Grundthema Analysis:  
Nonsmooth evolutions (1SSt VO)  
IGDK 1754 Compact Course**

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**05.11. — 15.11.2019 KFU Graz**

**Content:**

Evolutions are processes which evolve in time. When (as here) time is modelled by a real variable, time derivatives of the unknown functions appear. "Nonsmooth" means that their mathematical formulation involves - inequalities or inclusions instead of equations, and/or - functions which are not differentiable in the standard sense (for example, the absolute value function).

The lectures will mainly cover

- evolutions governed by monotone operators, and
- rate independent evolutions.

Tools from convex analysis and from set-valued analysis will be treated.

**Prerequisites:** Some knowledge of basic notions of functional analysis is assumed.

**Objective:** The Fundamental methods for the analysis of nonsmooth problems and the applications for the evolutions-inclusions and inequalities. The course provides the mathematical tools to deal with problems of that kind.

Language of the course: English

Target audience: Master-Students, PhD-Students

Assessment: Oral

Scheduled dates: Blocked course within 2 weeks; please see the calendar of the lecture 621.741 in UNIGRAZonline;