Numerical Methods in Mechanics and Selected Problems of Engineering Physics (part I)

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The course gives the PhD students the fundamental knowledge of discrete methods applied to statical and time dependent problems of mathematical physics, mainly dynamics of structures.

Main topics:

1. Discrete methods in boundary problems (*i.a.* the Finite Element Method).
2. Structural dynamics and numerical simulation of boundary-initial problems.
3. Impact engineering.
4. Space-time finite element analysis in mathematical physics.
5. Numerical aspects of large scale discrete analysis.

The total number of lecture hours: 30, laboratory exercises: 0 hours, self-teaching: 60, direct tutoring and consultations: 15 hours.

ECTS Points: 4