

Course content for International Master program „Mathematical modeling, computation and optimization“

<b>Course name</b>	Boundary Integral Methods
<b>Contents and Objectives</b>	<p><u>Contents:</u></p> <ul style="list-style-type: none"> <li>• boundary value problems for harmonic functions</li> <li>• piecewise holomorphic functions</li> <li>• Hilbert's and Riemann-Hilbert's boundary value problems</li> <li>• single and double layer potentials</li> </ul> <p>Objectives: Based on complex function theory and potential theory we deduce boundary integral equations and their solvability theory for different boundary value problems.</p>
<b>Teaching</b>	This course consists of lectures (4h/week).
<b>Prerequisites</b>	Basic courses in Analysis, Linear Algebra, and Complex Function Theory.
<b>Examination</b>	Oral exam (30 minutes)
<b>Credits</b>	6 ECTS points
<b>Frequency</b>	This course is given at least every second year.
<b>Workload</b>	The estimated total working time for this course is 180 hours.
<b>Duration</b>	This course is given during one semester.