

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

<b>Course name</b>	Orthogonal Polynomials
<b>Contents and Objectives</b>	<p><u>Contents:</u></p> <ul style="list-style-type: none"> <li>• basic theory of orthogonal polynomials</li> <li>• interpolation and quadrature processes based on orthogonal polynomials</li> <li>• chain sequences and orthogonal polynomials</li> <li>• the representation theorem and classical moment problems</li> <li>• orthogonal polynomials in the complex plane</li> <li>• applications in numerical analysis of operator equations</li> </ul> <p><u>Objectives:</u> We present different aspects of the theory of orthogonal polynomials and give some examples of their usage in applied mathematics.</p>
<b>Teaching</b>	This course consists of lectures (4h/week).
<b>Prerequisites</b>	Basic courses in Analysis and Linear Algebra.
<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.