

Course Name	Calculus of Variations
Contents and Objectives	<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Motivation/Modelling • First variation; Euler–Lagrange Equations • Basic tools from functional analysis • Existence of minimizers • Constrained minimization problems; Lagrange multipliers • Critical points as solutions to partial differential equations <p><u>Objectives:</u> Participants will be able to treat minimization problems on infinite dimensional spaces using the necessary tools from functional analysis. They will be capable of formulating problems from applied fields in a precise mathematical form and to carry out proofs independently.</p>
Teaching	<p>This course consists of lectures and exercise classes.</p> <ul style="list-style-type: none"> • Lecture: Calculus of Variations (4h/week) • Exercise class: Calculus of Variations (2h/week) <p>This class can be taught remotely.</p>
Prerequisites	none
Verwendbarkeit des Moduls	-
Examination	Oral exam (30 minutes)
Credits	8 ECTS points
Frequency	This course is given at least every second year.
Workload	The estimated total working time for this course is 240 hours.
Duration	This course is given during one semester.