

#### PEKÁR IMRE DOCTORAL SCHOOL OF MECHANICAL ENGINEERING

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#### List of courses for the complex examination

The complex examination consists of one main course and one subsidiary course. These must be chosen from the list of subjects given in the programme.

## Subjects of the complex examination of the doctoral programme in Building Services Engineering, Building Energy

main courses:	Building Energy
subsidiary courses:	Comfort Theory
	Thermal Engineering
	Air distribution systems in buildings
	Solar radiation geometry
	Modelling of energy processes
	Exergetic-based analysis of building services systems

# Subjects of the complex examination of the sub-programme Mechanical Process Design, Materials and Machine Diagnostics

main courses:	Numerical mechanics
	Dynamics
	Mechanical systems engineering and modelling
	Methodology and tools of machinery diagnostics
subsidiary courses:	Optical characterization of metal surfaces and thin films
	Non-destructive material testing
	Destructive material testing
	Modelling of Manufacturing Technologies
	• Composites
	Modern Robotics

## Subjects of the complex examination in the sub-programme Mechatronics, Cyber-Physical Systems

main courses:	Mechatronics
	• Electricity
	Measurement and Signal Processing
subsidiary courses:	Power Electronics
	Modern Robotics
	• The scientific approach to the transition between Industry 4.0 and
	Industry 5.0
	Cognitive Control of Cyber-Physical Systems
	Electronics and electronic energy converters
	<ul> <li>Physics and technology of MEMS devices</li> </ul>
	EMC Theory and Practice
	Cognitive Control of Cyber-Physical Systems

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