

# Introduction of the First Year Ph.D. Student

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Institute of Machine and Industrial Design  
Faculty of Mechanical Engineering  
Brno University of Technology

The presentation of the first-year Ph.D.  
students, 19th October 2015



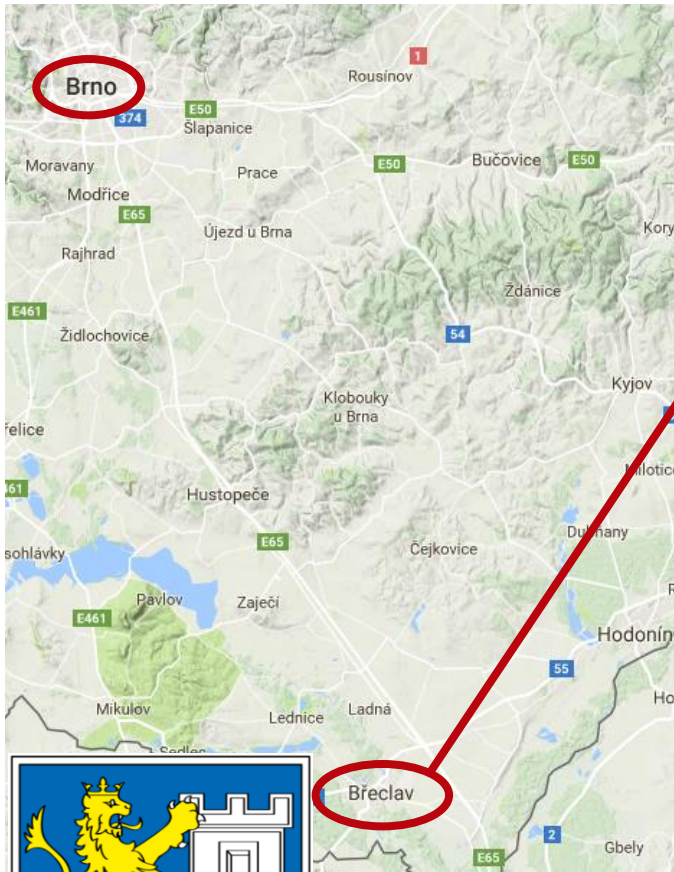
Institute of Machine  
and Industrial Design

# Content

- Introduction of myself
- Education and academic qualification
- Master's thesis
- About my dissertation thesis
- Teaching and learning activities



# Introduction of myself



## My hometown

- 24 941 people
- Břeclav chateau
- Pohansko



## David Rebenda

- Biotribology research group
- A4/401

## Hobbies

- Music
- Bass guitar/ double bass
- Reading



# Education and academic qualification

## High school

- Grammar and language school with accreditation for state language examination in Břeclav

## University

- Bachelor's degree programme at Brno University of Technology, Faculty of Mechanical Engineering

**Bachelor's thesis:** Design of mechanism for pronation and supination of the upper limb prostheses

**Supervisor:** doc. Ing. David Paloušek, Ph.D.



# Master's thesis

## University

- Master's degree programme Mechanical Design at Brno University of technology, Faculty of mechanical Engineering

**Master's Thesis:** Lubrication of hip joint replacements

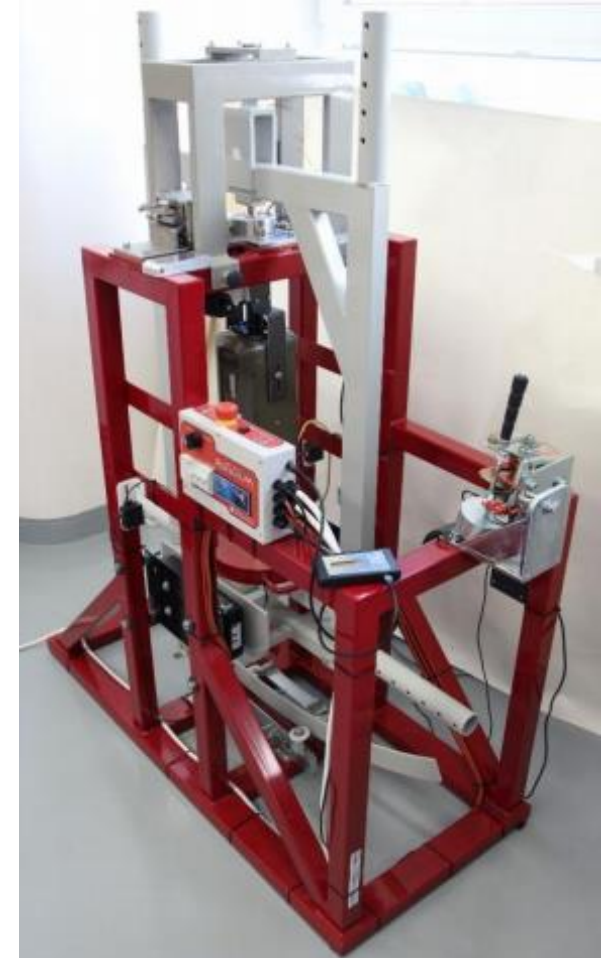
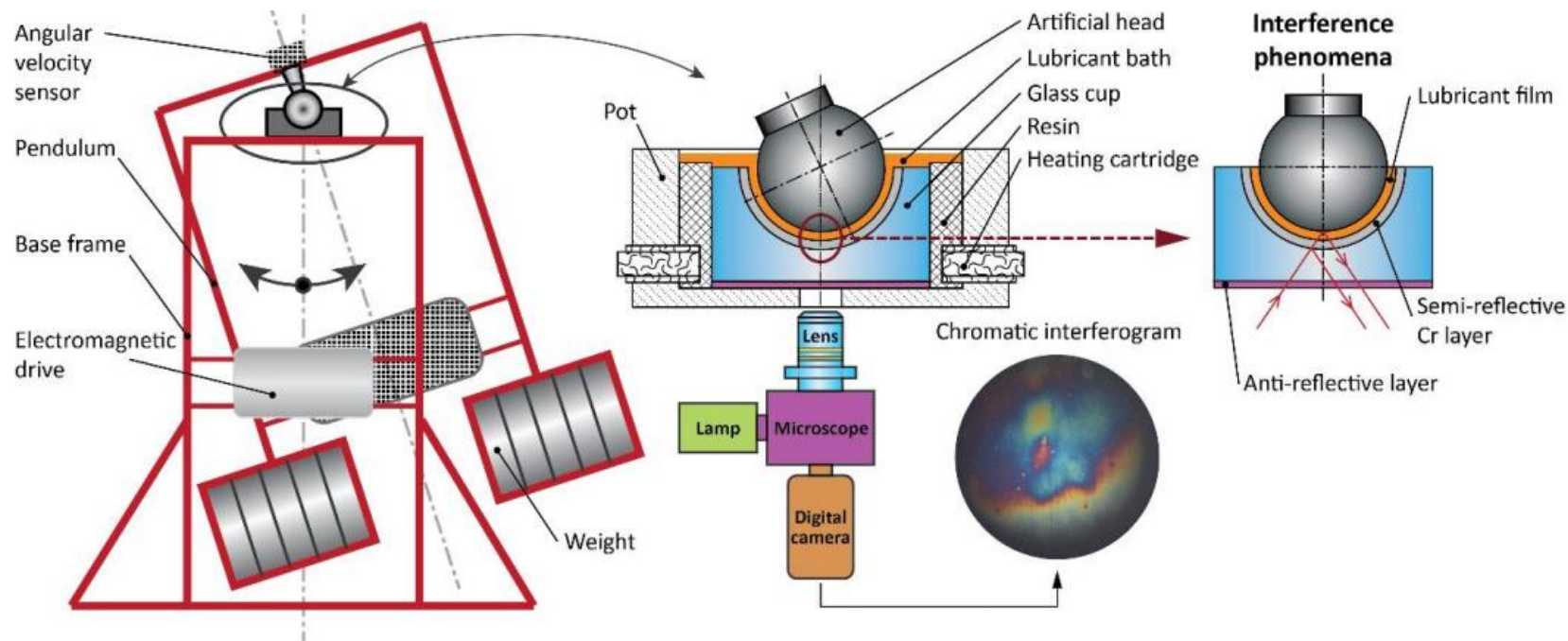
**Supervisor:** doc. Ing. Martin Vrbka, Ph.D.



# Master's thesis

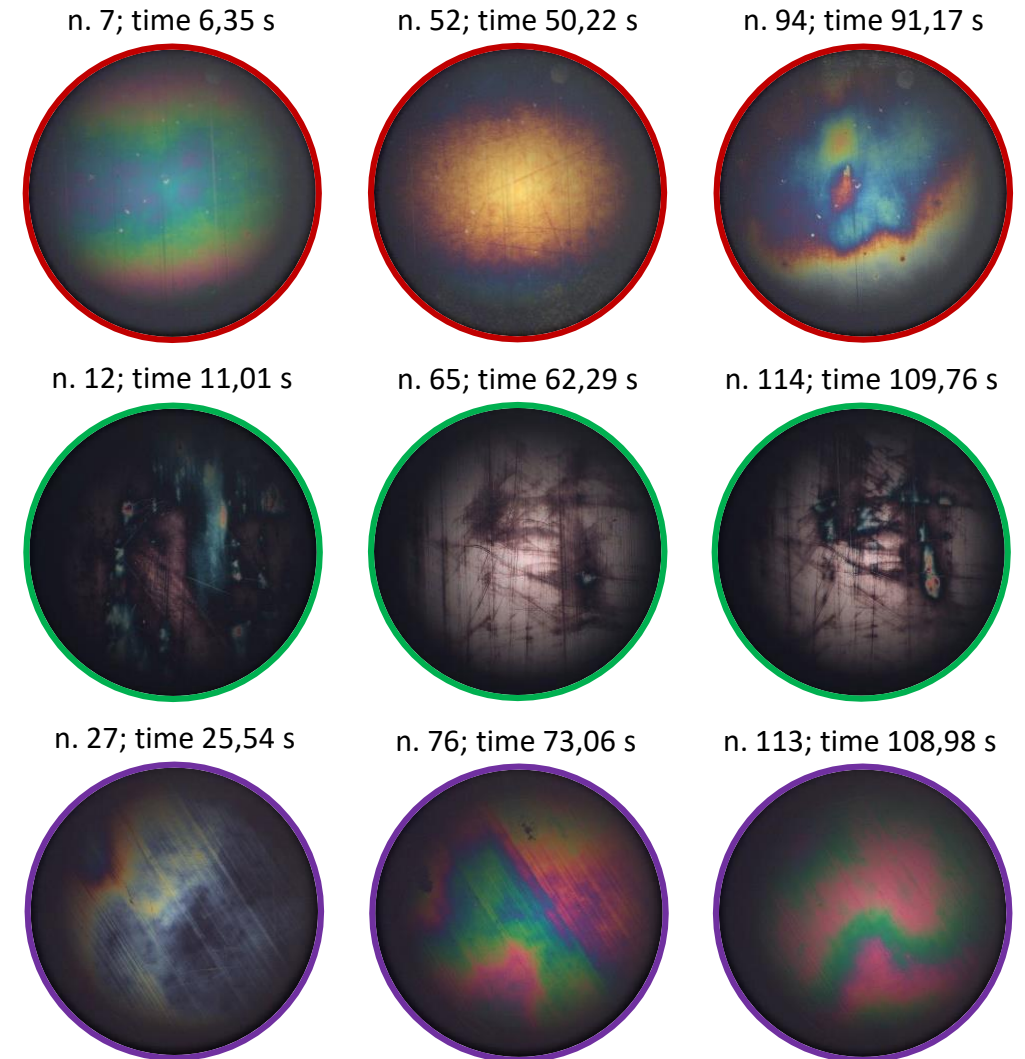
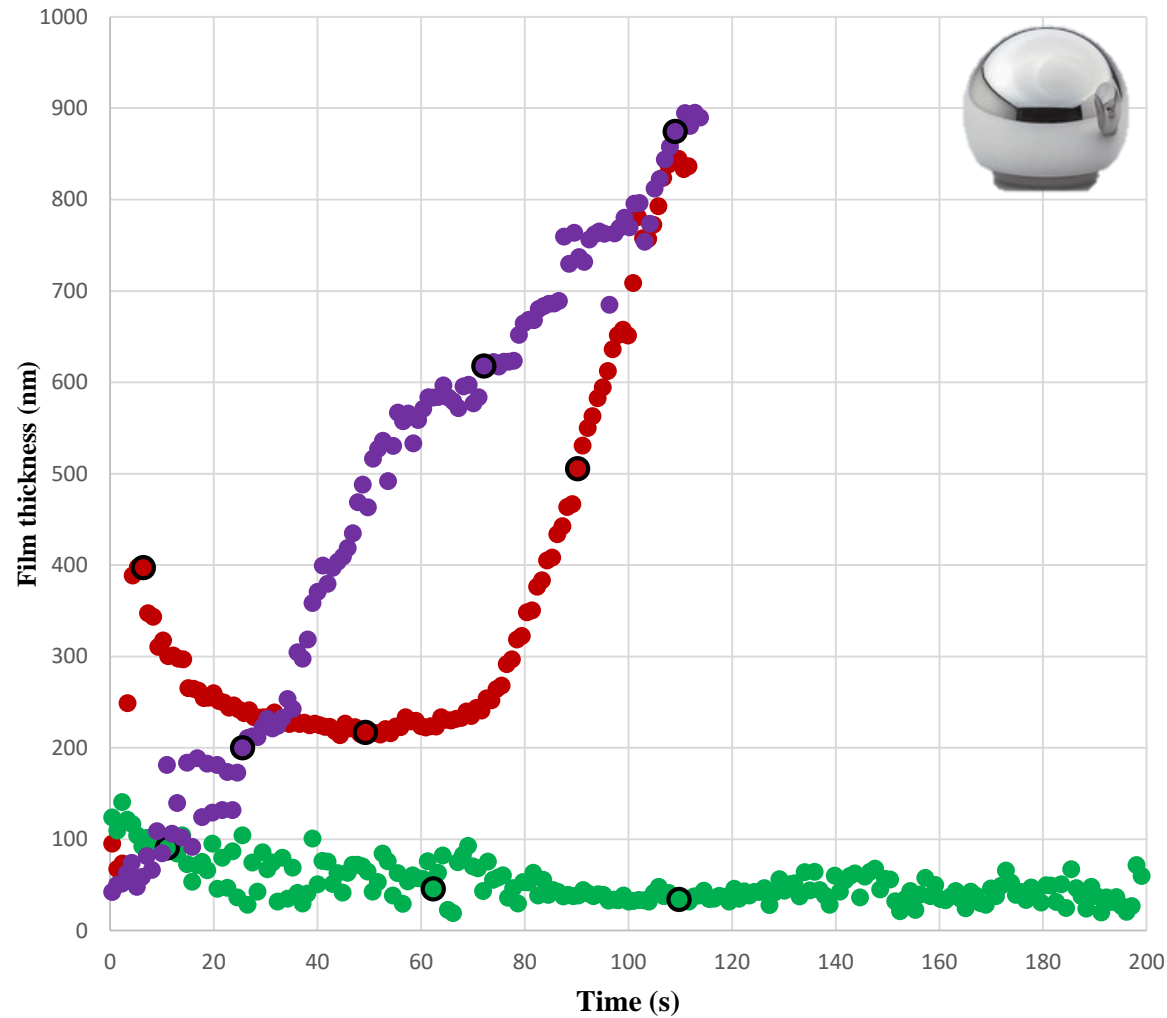
## Aim of Master's thesis

- Experimental analysis of lubrication in hip joint replacements
- Effect of synovial fluid and material on film thickness under static and dynamic loading conditions



# Master's thesis

## Effect of synovial fluid composition under dynamic loading conditions



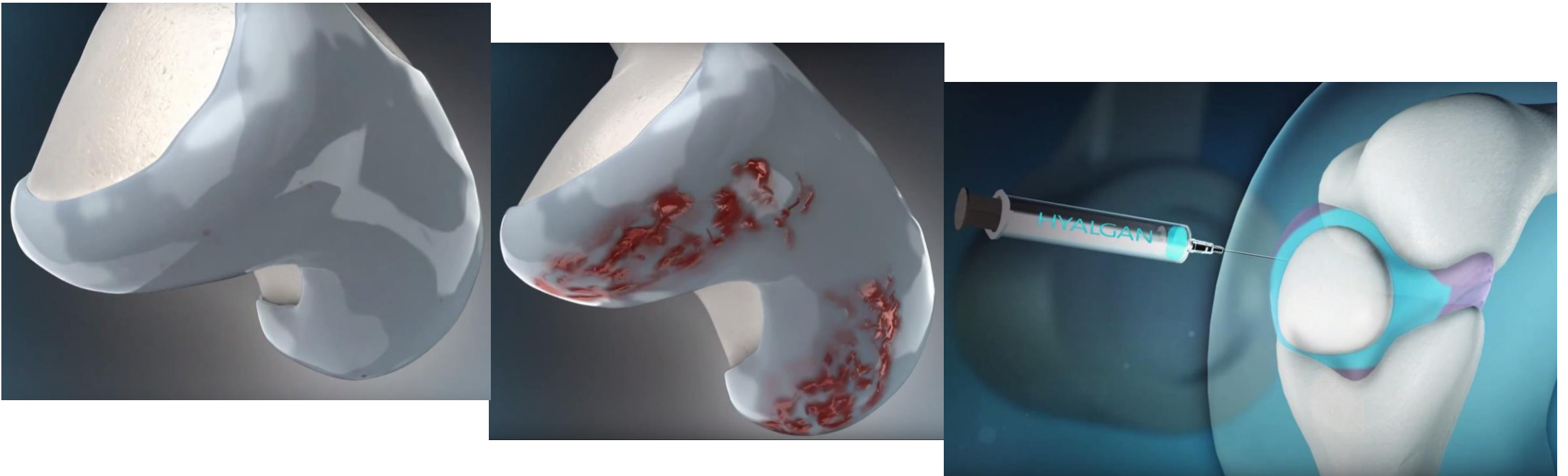
# About my dissertation

## Ph.D. study

- Institute of Machine and Industrial Design, Faculty of Mechanical Engineering, Brno University of Technology

**Ph.D. Thesis:** Effect of viscosupplementation on synovial joints lubrication

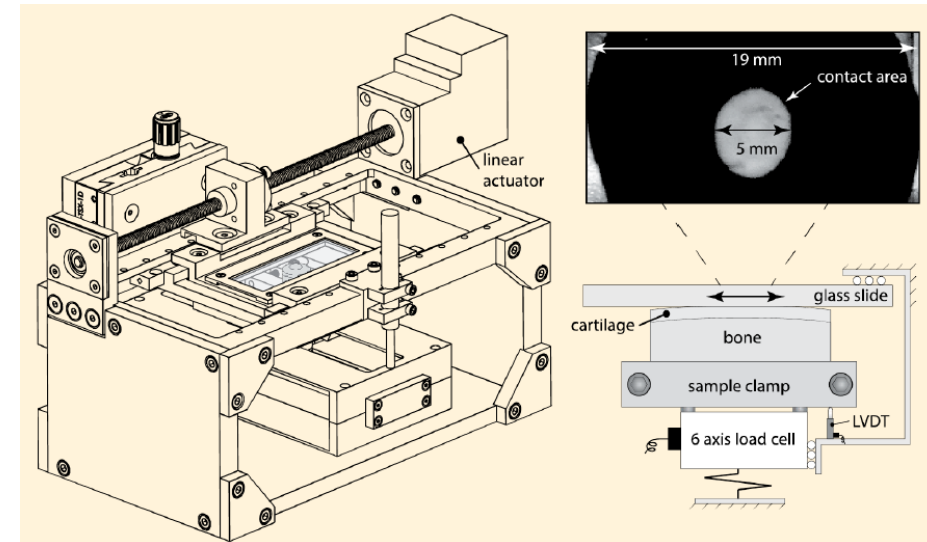
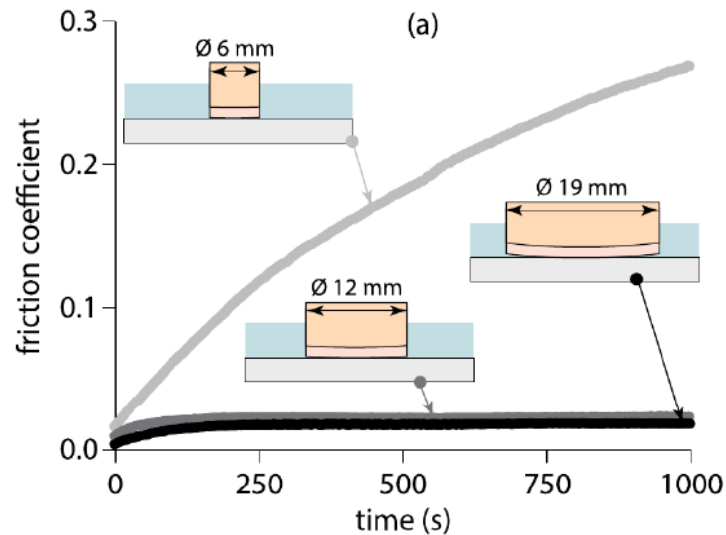
**Supervisor:** doc. Ing. Martin Vrbka, Ph.D.



# About my dissertation

**The aim** is to clarify the effect of viscosupplementation on synovial joints lubrication depending on the composition of synovial fluid and viscosupplement

- Bachelor's Thesis – Experimental study of friction in articular cartilage
- Ph.D. talent – Effect of viscosupplementation on friction and lubrication of articular cartilage



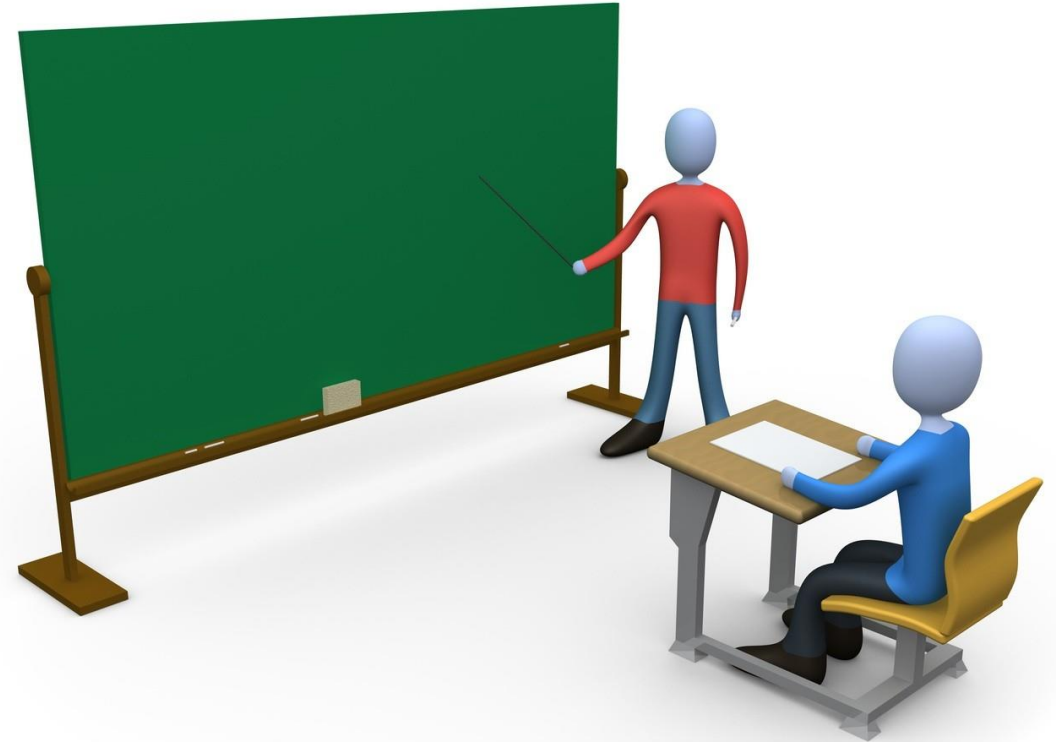
# Teaching and learning activities

## Teaching

- Winter semester
  - 5KS - Machine Design - Machine Elements
- Summer semester
  - 6KT - Machine Design - Mechanical Drives

## Learning

- 9MOP - Methodologies of Scientific Work
- 9VPR - Research Project and Its Management
- 9AJ - English for Doctoral Degree Study
- 9EHD - Elastohydrodynamics
- 9EXT - Experimental Methods in Tribology





# Thank you for attention

**David Rebenda**

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