Plain Bearing Technology – Design, Dimensioning and Testing

Fachbereich Maschinenbau und Verfahrenstechnik
Faculty of Mechanical and Process Engineering

Organisation

Dozent	Dr.-Ing. André Gabener
Lecture (2 SWS)	Monday | 14:30-16:00 | weekly | Room 05.1.015
Tutorial/Practical (2 SWS)	Monday | 16:00-17:30 | weekly | Room 05.1.015
Workload	180h | 60h (Präsenzzeit) | 120h (Selbststudium)
Credits	6 LP Master
Teilnahmevoraussetzungen	-
Prüfungsform	oral (TBC)

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Content

You will learn the **fundamentals of tribology** and the practical use of it. **What is tribology?**: Colloquial we can say: It's the **science of mating surfaces (contact between two parts), friction & wear**. The exciting point about tribology: You can find it everywhere in your daily life where to parts are in contact and are moving (sliding or rolling) relative to each other. From an engineering point of view, it is exciting due to its **multidisciplinary character**: Tribology covers elements from **material science, mechanics, chemistry & design**.

In this lecture I will show you from an industrial point of view (theory supported and explained with plenty of practical examples) the **triangle of design**:

Testing – Numerical Simulation – Analytical Solution

After the course you will be able:

- to **design plain bearings** including the theoretical and experimental determination of friction and wear behavior
- to **select appropriate tests** to determine either material properties or behavior of complete tribo systems

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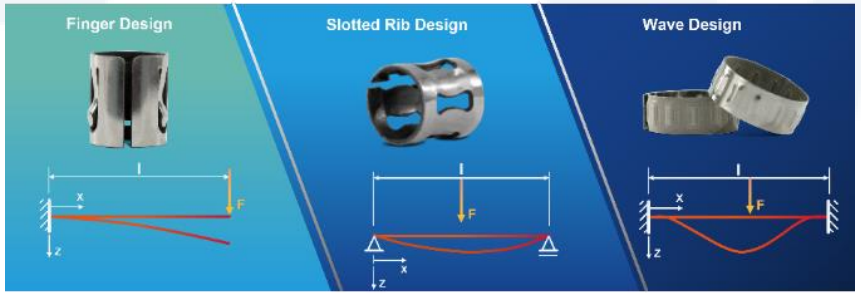
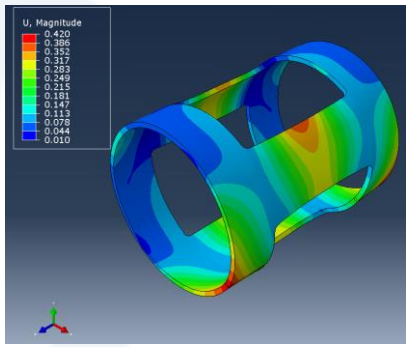
What else to say

Are you interested in the skill set and knowledge that a **development engineer in industry** requires in his daily life? I am happy to give you a (practical) insight into the **exciting world of tribology**. Parallel to the lecture we will have different **practical elements**:





- Tutorials (e.g. applied mechanics)
- Testing
- Numerical simulation using CREO
- Visit of production site of Saint-Gobain Performance Plastic in Willich
- A small design project in teams of two or three including a presentation of results

If you are excited, you might have already a look to:

Horst Czichos, Karl-Heinz Habig: „Tribologie-Handbuch - Tribometrie, Tribomaterialien, Tribotechnik“, Springer 2015