

ME-623

Advances in Contact Mechanics

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Cursus	Sem.	Type
Advanced Manufacturing		Opt.
Mechanics		Opt.

Language of teaching	English
Credits	2
Session	
Exam	Oral presentation
Workload	60h
Hours	42
Courses	14
TP	28
Number of positions	15

Frequency

Every 2 years

Remark

Next time: Spring 2022

Summary

This reading class will meet every Friday afternoon to discuss the book of Christopher Scholz (one chapter every two weeks). Class discussions will emphasize a mechanistic understanding of geophysical phenomena, with in depth discussions of fracture mechanics, and friction/wear processes.

Content

Rough surfaces
 Molecular origins of friction and wear
 Multi-asperity models
 Friction and fracture
 Rate and state friction laws
 Stick slip and earthquakes

Each weeks students will be assigned reading that will be discussed in class the following week (format is a reading class, and evaluation is based on active participation)

Learning Prerequisites**Required courses**

Master in Mechanics, Physics or Materials Science

Resources**Bibliography**

The book of V. Popov, "Contact mechanics and friction" was used as the reference text in 2018. In Spring 2020, the book of S. Scholz, "The Physics of earthquakes and faulting", third edition, will be our reference text.

Ressources en bibliothèque

- [The Mechanics of Earthquakes and Faulting / Scholz](#)