

PHYS-736

**Plasma instabilities**

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<b>Cursus</b>	<b>Sem.</b>	<b>Type</b>
Physics		Opt.

Language of teaching	English
Credits	4
Session	
Exam	Multiple
Workload	120h
<b>Hours</b>	<b>56</b>
Courses	36
Exercises	20
<b>Number of positions</b>	

**Frequency**

Every 2 years

**Remark**

Next time: Fall 2025

**Summary**

To complete the theoretical knowledge acquired before the graduate studies.

**Content**

1. Introduction to Magnetohydrodynamics (MHD)
2. MHD Equilibrium and Instabilities in Tokamak Plasmas
3. Kinetic Theory of Microinstabilities
4. Introduction to Non-linear Phenomena
5. Kinetic Theory of Macroscopic Instabilities

**Learning Prerequisites****Recommended courses**

Basic theoretical knowledge of plasma physics (2nd cycle EPFL or equivalent)

**Resources****Moodle Link**

- <https://go.epfl.ch/PHYS-736>