

ETH-531

**Nuclear computations lab**

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<b>Cursus</b>	<b>Sem.</b>	<b>Type</b>
Nuclear engineering	MA3	Obl.

Language of teaching	English
Credits	4
Session	Winter
Semester	Fall
Exam	During the semester
Workload	120h
Weeks	14
<b>Hours</b>	<b>4 weekly</b>
Courses	1 weekly
Exercises	3 weekly
<b>Number of positions</b>	

**Remark**

Cours donné par EPFL à PSI-Villigen

**Summary**

To acquire hands-on experience with the running of large computer codes in relation to the static analysis of nuclear reactor cores and the multi-physics simulation of nuclear power plant (NPP) dynamic behaviour

**Content**

Lattice (assembly) calculations  
 Thermal-hydraulic analysis  
 Reactor core analysis  
 Multi-physics core dynamics calculations  
 Best-estimate NPP transient analysis

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

Special topics in reactor physics, nuclear safety

**Learning Outcomes**

By the end of the course, the student must be able to:

- Interpret the output of nuclear simulation software
- Compose simple input data for nuclear simulation software

**Transversal skills**

- Access and evaluate appropriate sources of information.
- Use both general and domain specific IT resources and tools