

MSE-735

**Scanning and Analytical Transmission Electron Microscopy**

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Cursus	Sem.	Type
Materials Science and Engineering		Opt.

Language of teaching	English
Credits	1
Session	
Exam	Oral presentation
Workload	30h
<b>Hours</b>	<b>22</b>
Lecture	11
Exercises	3
Practical work	8
<b>Number of positions</b>	<b>30</b>

**Frequency**

Every year

**Summary**

This intensive course discusses advanced TEM techniques such as: scanning TEM; analytical TEM using EELS and EDX; aberration corrected imaging; and image simulation. It is intended for researchers who have taken the introductory TEM course MSE-637 or who have a good background in conventional TEM.

**Content**

This intensive course is intended for researchers who are potential new users of transmission electron microscopes and have followed the introductory doctoral course on TEM or have already a good background in conventional transmission electron microscopy. It will provide them with a basic understanding of the methods, relying on an explanation of the physics at play.

Demonstrations will be given on the microscopes.

**Keywords**

Transmission electron microscopy, EDX analysis, EELS

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

Doctoral school "Transmission electron microscopy and diffraction"

**Resources****Websites**

- [cime.epfl.ch](http://cime.epfl.ch)

**Moodle Link**

- <https://go.epfl.ch/MSE-735>