



- in materials research to analyze and solve complex problems.
- 2 Analyze, evaluate and structurally synthesise information from scientific literature on experimental solid state physics and materials characterization techniques.
  - 3 Show a professional attitude which is a sign of openness to new scientific developments and their applications in a broad scientific or societal context.
  - 4 Present own literature review appropriately orally to peers.

#### **Conditions for credit contract**

Access to this course unit via a credit contract is determined after successful competences assessment

#### **Conditions for exam contract**

This course unit cannot be taken via an exam contract

#### **Teaching methods**

Seminar, Lecture, Practical, Independent work, Peer teaching

#### **Extra information on the teaching methods**

- The seminars allow to apply and better understand the concepts introduced in the lectures.
- The practicals (lab sessions) provide an opportunity to apply some theoretical concepts in practice, and gain hands-on experience with some of the characterisation techniques discussed.
- Through independent work, the students immerse themselves in a topic of their own choosing, after which they prepare and give a presentation on it directed to peers.

#### **Study material**

Type: Slides

Name: Slides

Indicative price: Free or paid by faculty

Optional: no

Language : English

Available on Ufora : Yes

Type: Other

Name: Scientific articles and book chapters

Indicative price: Free or paid by faculty

Optional: no

Language : English

Available on Ufora : Yes

#### **References**

Takeshi Egami, Simon J.L. Billinge, Underneath the Bragg peaks : structural analysis of complex materials, Pergamon, 2012. ISBN:9780080971339  
V. K. Pecharsky, P. Y. Zavalij, Fundamentals of powder diffraction and structural characterization of materials, Kluwer Academic, Boston (2003)  
C.R. Brundle, C.A. Evans, S. Wilson, Encyclopedia of Materials Characterization, Butterworth-Heinemann, Boston (1992)

#### **Course content-related study coaching**

Individual explanations by instructors, by appointment.

#### **Assessment moments**

end-of-term and continuous assessment

#### **Examination methods in case of periodic assessment during the first examination period**

Written assessment with open-ended questions, Written assessment open-book

#### **Examination methods in case of periodic assessment during the second examination period**

Written assessment with open-ended questions, Written assessment open-book

#### **Examination methods in case of permanent assessment**

Oral assessment, Presentation

#### **Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible

#### **Extra information on the examination methods**

Continuous assessment: oral presentation in public with question round.

End-of-term assessment: written exam, partly closed-book, partly open-book.

**Calculation of the examination mark**

Continuous assessment (30%) + End-of-term assessment (70%)