Doctoral course - International Process Metallurgy Symposium,

SYLLABUS

Please note! This course is not a part of the curriculum of School of Chemical Engineering (Aalto University). The course description (outcomes, assessment methods and key content) may change slightly depending on the topics and practical arrangements of the current edition of International Process Metallurgy Symposium.

LEARNING OUTCOMES

After the completion of the course the student will be able to:

- **Identify** research innovations in process metallurgy and circular economy
- **explain** current technologies applied for mineral processing, primary metal productions and metal recycling
- **reflect** on connections between current trends in process metallurgy and the topic of their own research
- **communicate** new scientific knowledge
- **identify** potential business innovations and entrepreneurial opportunities arising from scientific research in process metallurgy and the circular economy

Credits: 5

Schedule:

- Kick-off meeting: 20.10 (online) from 10:00 to 12:00
- Symposium: 27.10-28.10.2025; (face-to-face)
- Doctoral Research Seminar: 02.12.2025 (hybrid mode)

Teacher in charge (valid for 2025): Anna Klemettinen

Teacher in charge (applies in this implementation): Anna Klemettinen

Language of instruction and studies:

- Teaching language: English
- Languages of study attainment: English

CONTENT, ASSESSMENT AND WORKLOAD

Content

- **Valid for 2025:**

The course is open for doctoral students from all countries and universities. Participation in the course is a great opportunity to broad your knowledge in the area of metallurgy and circular economy. During

the symposium, students meet experts in the metallurgical field from both academia and industry. Students listen to their presentations and have an opportunity to ask questions about the topics that they are interested in. Our course also gives an excellent possibility for networking with other doctoral students from different countries and universities.

Assessment Methods and Criteria

- **Valid for 2025:**

Individual work before, during and after Symposium; active participation in Symposium, written report, presentation.

Workload

- **Valid for 2025**

Kick-of meeting: 2h

Symposium: 16h

Doctoral Seminar: 8h

Individual work (reading and writing): 38 h

Individual studying and reflection 56 h

DETAILS

Study Material

- **Valid for 2025:**

Proceedings of International Process Metallurgy Symposium 2025 and selected journal articles related to topics of presentations found in Symposium Program.

Prerequisites

Doctoral student's status, no other prerequisites

SDG: Sustainable Development Goals

8 Decent Work and Economic Growth

9 Industry, Innovation and Infrastructure

11 Sustainable Cities and Communities

12 Responsible Production and Consumption

13 Climate Action