

Hands-on mass spectrometry for the analyses of minerals, amino acids, short chain fatty acids (SCFA) and other biomarkers/metabolites using quantitative and explorative techniques

Level of course: Master, PhD and Postdoc



The aim of the course is to give an understanding on how to apply mass spectrometry in nutritional and health research to improve the quality of analyses for inorganic and organic elements.

Learning outcomes and competences:

After finalizing the course, the students will:

- 1) Understand the basic principles of mass spectrometry and its application in nutritional and health research and the use of quantitative and explorative techniques
- 2) Understand the basic principles of mass spectrometry in combination with chromatographic techniques such as Liquid and Gas Chromatography
- 3) Understand the basic principles of sample preparation for minerals, amino acids, SCFA, phenolic compounds and etc. and untargeted metabolomics
- 4) Understand the basic principles of quantitative and explorative techniques combined with chemometrics
- 5) Be able to prepare samples for above mentioned procedures
- 6) Be able to perform quantification based on standard curve procedures (quantitative techniques) or perform data-processing and visualization (explorative techniques)

The following instruments will be used: LC-MS/MS (Qtrap 5500), LC-MS (Qtof), ICP-MS/MS (iCAP TQ), GC-MS