

Syllabus

Kursbeschreibung

Titel der Lehrveranstaltung	Advanced sample preparation techniques and analysis of food contaminants
Code der Lehrveranstaltung	44747
Zusätzlicher Titel der Lehrveranstaltung	
Wissenschaftlich-disziplinärer Bereich	CHEM-07/B
Sprache	Englisch
Studiengang	Master in Lebensmittelwissenschaften für Innovation und Authentizität
Andere Studiengänge (gem. Lehrveranstaltung)	
Dozenten/Dozentinnen	Prof. - Ass. Sabrina Moret, Sabrina.Moret@unibz.it https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/43386
Wissensch. Mitarbeiter/Mitarbeiterin	
Semester	Erstes Semester
Studienjahr/e	2
KP	6
Vorlesungsstunden	50
Laboratoriumsstunden	10
Stunden für individuelles Studium	90
Vorgesehene Sprechzeiten	18
Inhaltsangabe	-
Themen der Lehrveranstaltung	The course gives a general overview of scientific contents, but is also designed for acquiring professional skills and knowledge on the following educational objectives:

	· Principle, parameter optimization and basic applications of innovative sample preparation techniques: supercritical fluid extraction (SFE), pressurized liquid extraction (PLE), microwave assisted extraction (MAE), membrane-based extraction, solid phase extraction (SPE), solid phase micro extraction (SPME), stir bar sorptive extraction (SBSE), headspace sorptive extraction (HSSE), headspace techniques, purge and trap. · Principle, advantages and application of hyphenated, multidimensional chromatographic techniques: coupled LC-LC and LC-LC-GC, LC-GC and GCxGC. · Chemical properties, origin, toxicity, distribution and analytical determination of the main organic contaminants in foods: PAHs, PCBs, dioxins, mineral oils, mycotoxins and residues of pesticides, antibiotics, anabolizing substances, and hormones.
Stichwörter	
Empfohlene Voraussetzungen	
Propädeutische Lehrveranstaltungen	
Unterrichtsform	
Anwesenheitspflicht	No
Spezifische Bildungsziele und erwartete Lernergebnisse	· Knowledge and understanding of principles and basic applications of advanced sample preparation techniques and coupled chromatographic techniques for the analysis of trace contaminants in food. · Knowledge and understanding of main classes of organic contaminants in food (focusing on toxicity aspects, European legislation, and analytical techniques for their determination). · Acquire the skills to select and apply proper sample preparation methods and to understand and communicate health risks due to the presence of food contaminants · Acquire appropriate terminology and learning skills
Spezifisches Bildungsziel und erwartete Lernergebnisse (zusätzliche Informationen)	
Art der Prüfung	Written examination to ascertain the achievement of the expected learning outcomes

Bewertungskriterien	Clarity of answers, mastery of language (also with respect to teaching language), ability to establish relationships between topics
Pfichtliteratur	Lecture notes
Weiterführende Literatur	- Moret, G. Purcaro, L.S. Conte, Il campione per l'analisi chimica, Springer-Verlag Italia, Milano (2014) - Dean J.R., Extraction techniques in analytical science; Wiley (2009). - Mondello, Lewis and Bartle, Multidimensional Chromatography, Wiley and Sons, New York (2002). - Food Chemical safety Vol. 1: Contaminants, edited by David Watson, Published by Woodhead Publishing (2001)
Weitere Informationen	
Ziele für nachhaltige Entwicklung (SDGs)	