

Syllabus

Descrizione corso

Titolo insegnamento	Advanced sample preparation techniques and analysis of food contaminants
Codice insegnamento	44747
Titolo aggiuntivo	
Settore Scientifico-Disciplinare	CHEM-07/B
Lingua	Inglese
Corso di Studio	Corso di laurea magistrale in Scienze degli alimenti per l'innovazione e l'autenticità
Altri Corsi di Studio (mutuati)	
Docenti	prof. - ass. Sabrina Moret, Sabrina.Moret@unibz.it https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/43386
Assistente	
Semestre	Primo semestre
Anno/i di corso	2
CFU	6
Ore didattica frontale	50
Ore di laboratorio	10
Ore di studio individuale	90
Ore di ricevimento previste	18
Sintesi contenuti	-
Argomenti dell'insegnamento	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.
Parole chiave	
Prerequisiti	
Insegnamenti propedeutici	
Modalità di insegnamento	
Obbligo di frequenza	No
Obiettivi formativi specifici e risultati di apprendimento attesi	· 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
Obiettivi formativi specifici e risultati di apprendimento attesi (ulteriori info.)	
Modalità di esame	Written examination to ascertain the achievement of the expected learning outcomes
Criteri di valutazione	Clarity of answers, mastery of language (also with respect to teaching language), ability to establish relationships between topics
Bibliografia obbligatoria	Lecture notes

Bibliografia facoltativa	- 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)
Altre informazioni	
Obiettivi di Sviluppo Sostenibile (SDGs)	