

Name of the course	Modern sample preparation techniques for chromatographic analysis
Number of instruction hours	20
Outline of course/module content	<p>Sample preparation. Importance and basic principle of sample preparation procedure in chromatographic analysis. Goal of sample preparation procedure. Review of recent sample preparation techniques. Extraction as the oldest sample preparation technique.</p> <p>Analytes in solid samples. Pressurized solvent extraction (PSE). Supercritical fluid extraction (SFE). Superheated water extraction (SHWE). Ultrasonic extraction (USE). Microwave assisted solvent extraction (MAE). Matrix solid-phase dispersion (MSPD). Dispersive solid-phase extraction (DSPE).</p> <p>Analytes in liquid samples. Solid-phase extraction (SPE). Solid-phase microextraction (SPME). Stir bar sorptive extraction (SBSE). Membrane extraction. Single drop microextraction (SDME). Liquid phase microextraction (LPME).</p> <p>Analytes in the gas phase.</p> <p>Another sample preparation techniques. Environmental samples: problems and approach. Specific applications. Optimization of sample preparation procedure. Validation.</p>
Description of instruction methods	Lectures, consultations and seminar papers.
Description of course/module requirements	Oral exam. Oral presentation of the seminar paper.