

**Analytical Methods in Biotechnology - lecture + laboratory + project** (15 h+15 h+30 h , ECTS 5, Project 50 %, laboratory 20% and oral presentation 30% of total points)

Project - Students select one of the proposed subjects presented as an analytical problem to solve. They are expected to design analytical procedure (on the basis of literature) in aim to determine or identify chosen compound(s) with the special emphasis on matrix composition. The report containing analytical procedure is obligatory for admission of student to an experimental part. The project will include following problems:

- determination of metals, amino acids or other components in biological tissue,
- determination of metals, dyes or preservatives in food, - determination of bioactive components in drugs.

Laboratory - Experiments will be carried out by students with minimal control of assistant (short training and safety precautions only). Simple instrumental and classic analytical methods will be proposed as optional in frame of the project:

- Volumetric analysis
- Spectrophotometry
- Capillary electrophoresis
- Liquid chromatography
- Potentiometry
- Voltammetry

Seminary - As a summary students are required to present the aim of the project, procedure, results and conclusions in the form of oral presentation.