**Level**: bachelor

**Course title: ANALYTICAL CHEMISTRY II**

**Status**: obligatory

**ECTS**: 9

**Requirements**: none

**Learning objectives:**

Providing broad and balanced theoretical and practical knowledge of key analytical concepts. Providing the necessary methodological basis in the field of quantitative analysis as a basis for further understanding and application in other fields of chemistry. Developing practical skills and ability to apply standard methodologies and good laboratory practice in solving problems in analytical chemistry in further chemical education, and later in professional work.

**Learning outcomes:**

Student should be able to:

- Specify application of methods of quantitative analysis in contemporary society.
- Demonstrate acquired knowledge and understanding of basic facts, concepts, principles and theories of qualitative analytical chemistry in solving basic familiar and unfamiliar analytical problems.
- Formulate conclusions on the basis of collection and interpretation of volumetric and gravimetric results and write report on the conducted analysis.
- Apply mathematical and statistical knowledge and computer skills in error analysis in the quantitative analytical experiments.
- Handle the equipment and apply simple computer software or models in processing experimental data.

**Syllabus**

*Theoretical instruction:*

Quantitative chemical analysis, volumetric analysis: measuring mass and volume. Errors in quantitative analysis. Acid–base titrations. Complexometric titrations. Oxido-reduction methods. Precipitation titrations. Gravimetric analysis, operations in gravimetric analysis, gravimetric determination. Instrumental endpoint detection.

*Practical instruction:*

Laboratory exercises are in accordance with the theoretical syllabus.

| **Weekly teaching load** | | | | Other: |
|---|---|---|---|---|
| Lectures: 3 | Exercises: 1 | Other forms of teaching: 5 | Student research: | |