

Course description

Course abbreviation: KCH/VMCHA
Course name: Selected Methods of Chemical Analysis
Academic Year: 2016/2017

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|---|---------------------------------------|-------------------------------|-----------------|
| Department/Unit / | KCH / VMCHA | Academic Year | 2016/2017 |
| Title | Selected Methods of Chemical Analysis | Type of completion | Pre-Exam Credit |
| Accredited/Credits | Yes, 5 Cred. | Type of completion | Combined |
| Number of hours | Tutorial 5 [Hours/Week] | Course credit prior to | NO |
| Occ/max | Status A Status B Status C | Counted into average | NO |
| Summer semester | 10 / - 0 / 0 0 / 0 | Min. (B+C) students | not determined |
| Winter semester | 0 / - 0 / - 0 / - | Repeated registration | NO |
| Timetable | Yes | Semester taught | Summer semester |
| Language of instruction | Czech | Počet dnů praxe | 0 |
| Substituted course | None | | |
| Preclusive courses | N/A | | |
| Prerequisite | N/A | | |
| Informally recommended courses | N/A | | |
| Courses depending on this Course | N/A | | |

Course objectives:

Practical education of analysis by means of spectral methods (AAS, UV/VIS) and by elektroanalytical methods; it covers selected methods of samples treatment, too.

Requirements on student

Credit will be allocated on the basis of 100% participation in practical exercises and surrendered and accepted protocols.

Evaluation of the subject as well as the exam grading is made according to the articles No 31 - 33 in the Regulations on Study and Examinations University of Ostrava

Content

1. Introduction with practical tasks and laboratory equipment.
2. - 6. practical tasks:
 1. Fast sequential multielement determination by AAS (Varian FS 240).
 2. Real sample analysis by means of FS - multielement determination of metals
 3. Determination of selected compound by means of UV/VIS (Cary 50, Varian).
 4. Potentiometry - membrane electrodes activation, calibration of pHmeter, pH measurement.
 5. Voltammetry on solid electrode
 6. Solid sample decomposition.
 9. Sequential leaching of solid.
7. - 13. Analysis of unknown sample - choice and optimization of method of analytical process

Prerequisites - other information about course preconditions

none

Competences acquired

obtaining of practical experience with the instrumental analytical methods
obtaining of principles of laboratory practice

Studijní opory

Guarantors and lecturers

- **Guarantors:** doc. Ing. Zuzana Navrátilová, CSc.

- **Tutorial lecturer:** Mgr. Lenka Bláhová, doc. Ing. Zuzana Navrátilová, CSc.

Literature

- **Recommended:** *Aplikační listy používané instrumentace.- Application forms used by instrumentation..*
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Time requirements

| Activities | Time requirements for activity [h] |
|--|------------------------------------|
| Being present in classes | 65 |
| Semestral work | 45 |
| Preparation for a credit test | 10 |
| Consultation of work with the teacher/tutor (incl. electronic) | 5 |
| Total: | 125 |

assessment methods

professional knowledge

Continuous analysis of student's achievements

teaching methods

professional knowledge

Ability and practical skills

Briefing

Experiment

Observation

learning outcomes

professional knowledge - knowledge resulting from the course:

obtaining of practical experience with the instrumental analytical methods

obtaining of principles of laboratory practice

Course is included in study programmes:

| Study Programme | Type of | Form of | Branch | Stage | St. plan v. | Year | Block | Status | R.year | R. |
|-----------------|---------------------|-----------|-------------------------------------|-------|-------------|------|------------------|--------|--------|----|
| Chemistry | Postgraduate Master | Full-time | Analytical Chemistry of Solid Phase | 1 | 2013 | 2016 | Povinné předměty | A | 1 | LS |