

Advanced Laboratory Course in Analytical Chemistry MC230C21E

Beginning of teaching and rules of the MC230C21E course

Dear Erasmus+ students,

The laboratory course MC230C21E is taught in both semesters. In 8 working days, eight experimental tasks have to be completed by working in pairs or trios. The basic working hours in the laboratory are from 8.30 to 16.00. Most of the tasks can be completed before 13.00.

You will be informed about the registration for the announced blocks and the beginning of the course by e-mail, which you have listed in the [SIS](#).

On the first day of the course, please come to laboratory no. 110 (Laboratory of Advanced Practice in Analytical Chemistry) in the Department of Analytical Chemistry (1st floor on the left), Faculty of Science, Charles University, Hlavova 8.

To the laboratory you have to bring a protective coat, suitable shoes for laboratory use and safety glasses. Safety glasses can be borrowed in the laboratory. Experimental work cannot be carried out without these protective items. Clothes and bags can be left in a locker in the corridor.

Pregnant students are not allowed to participate in the practical course!

- Students are divided into pairs/groups in which they work on experimental tasks. Each student must complete all practical tasks according to the schedule. In case of absence (illness, etc.) from the scheduled task, it is necessary to inform the teacher by e-mail (jana.sobotnikova@natur.cuni.cz).
- The laboratory course takes place every day on 8 allotted working days; working hours are from 8.30 to 16.00. Instructions for each task are sent to enrolled students by email and are also available in the SIS. Students should carefully read the safety regulations for working in chemical laboratories, which can also be downloaded from the SIS, before starting the laboratory course. Students confirm that they have read and understood the safety regulations by signing the safety regulations before starting the experimental work.
- Students need to prepare for the task in advance - read the instructions thoroughly, **do the necessary calculations**, think about the correct procedure or refresh their knowledge of principles, methods and instrumentation.
- Before starting the experimental work, the students' readiness for the task is verified. The level of readiness is graded from 1 to 4 (see table below). If students do not demonstrate sufficient knowledge and are graded 4, they cannot start the assignment. The task can only be performed after the students review the theory and task again and pass the examination. In the event of a repeated lack of knowledge, the task will be carried out on an alternative date.
- During the experimental work, students write down the measured data in the Result sheets (they are part of the file "Instructions for tasks", it is necessary to print them) or in their laboratory diary (bound notebook). The raw measured data are not rounded and can be written in the form provided by the instrument. Statistically processed data must be rounded to the relevant number of decimal places. Unreasonably rounded or unrounded data will be considered as partially incorrect.
- After completing the task, **the students present their measured data to the teacher for checking** and clean the task area according to the instructions of the laboratory technicians. The students can then leave the laboratory.
- Each student will hand in his/her protocols from all tasks in the box on the door to laboratory 110 no later than 14 days after the end of the laboratory course. **The protocol for each task will consist of the completed result sheets found at the end of the task instructions, original instrument records (if available) and required plots.**

- Students can contact the teacher at any time for advice (help) in completing the protocol. The contact emails are as follows: hana.dejmкова@natur.cuni.cz (Polarography), vlastimil.vyskocil@natur.cuni.cz (Conductometry and Karl Fischer titration), jana.sobotnikova@natu.cuni.cz (GC and CZE), anton.korban@natur.cuni.cz (HPLC), vaclav.cerveny@natur.cuni.cz (AAS+AES), eliska.novakova@natur.cuni.cz (Spectrophotometry).
- The teacher will correct and grade the protocols on a scale of 1 to 4 (see table below). When correcting protocols, great importance is given to the correctness of the calculated values, the correct indication of the units of the quantities and the completeness of the submitted protocol. **If the protocol is incomplete or contains serious errors, it will be graded with a 4 (F)** and it is the student's responsibility to correct all errors and resubmit the corrected protocol, including the original protocol, within 2 weeks. **The revised protocol will be re-evaluated and both grades of the revised report will be included in the overall course grade.**
- **If, when correcting the report, the teacher finds evidence of plagiarism (verbatim use of text or values from another report), such a report will automatically be marked 4/4 without the possibility of further correction.**

Table of evaluation parameters

Grade	Oral examination	Protocol
1 (A)	excellent knowledge, clear and correct answers	complete, well processed, without comments and errors
1- (B), 2 (C)	very good knowledge, slight hesitation in answers	complete, well processed, without serious errors
2- (D), 3 (E)	good knowledge, sufficient to complete the task	complete, acceptable with comments
4 (F)	insufficient knowledge of the theory or of the execution of the task; the task will be measured at an alternative date	contains gross errors or is incomplete, not acceptable, it must be corrected

- **What do we ask in the oral examination?**

- Theory of the method - explanation of the principle, possibilities of instrumentation, etc.

- Task measurement - which samples are determined, how, dilution of solutions, method of calculating the analyte content in the sample, statistical data evaluation, etc. and general orientation in the task - whether you have an idea what subtasks and in what order you need to carry out.

- **Credits will be awarded to students whose sum of all grades from oral examinations (including 4 and grades from corrective examinations) does not exceed 25 and whose sum of all grades from protocols (also including 4 and grades from revised protocols) does not exceed 25.**

- **If the sum of the grades from the oral examinations or protocols exceeds 25, an additional oral examination will be required for credit.**

- **If the sum of the grades from the oral examinations or protocols exceeds 30, no course credit is awarded. Re-enrolment in the course is required to receive credit.**

RNDr. Jana Sobotníková, Ph.D. and the teachers of the MC230C21E course