Practical Analytical Chemistry

From the module handbook:

Learning Targets
The students acquire advanced theoretical and practical basic knowledge in applied analytical chemistry. By direct integration into a project-oriented research topic they learn how to set-up and validate analytical methods aiming at answering research questions. The students receive thus also an active insight into the everyday life in a modern analytical laboratory.
Contents
Rather than carrying out pre-set identical experiments on a lab course level as on the Bachelor level, in the Master practical course analytical chemistry students select topics suggested by all research groups involved in analytical chemistry training, covering topics from advanced spectrometry via hyphenation techniques to sophisticated mass spectrometry. Although only a limited and individually selected number of analytical techniques will thus be learned hands-on, this procedure contributes to the development of an individual study profile and due to the research orientation is much more motivating for the students than carrying out pre-selected experiments with known results.

Regulating remarks:

- **Currently responsible lecturer for the practical:**
  PD Dr. Ursula Telgheder, ursula.telgheder@uni-due.de
  Please address all organizational/acceptance questions remaining after the initial information session (see below) ONLY to PD Dr. Ursula Telgheder, not to anybody else.
- The Practical Analytical Chemistry is carried out as a research project for five weeks full time without concurrent lectures or other obligations to six weeks in the term time (module handbook: 225 h presence). This does NOT include writing the research report (module handbook: 75 h).
- Students will typically carry out their Practical Analytical Chemistry in groups of 2 students. Exceptions are possible but discouraged in order to be able to provide placements for all students.
- At the beginning of each summer term, a list with potential topics for the Practical Analytical Chemistry is distributed to all Master students of 2nd term in Chemistry or Water Science and an information session will be held (separately announced).
- After distribution of the list, all students are invited to review the topics and to directly contact the indicated supervisors. Please be aware that this list is a collection of topics available in spring. There might be substantial changes and in particular further opportunities throughout the year!
- Students may also choose to do the Practical Analytical Chemistry in a research group at UDE or externally that is not listed. In this case, however, they need to contact the responsible lecturer (see above) **before** commencing their work in order to make sure that academic supervision is guaranteed and that the project is clearly related to analytical chemistry. **If this procedure is not followed, the practical cannot be accepted.**

- Students and direct supervisors can arrange the beginning of the practical work among themselves. In principle, there are no time restrictions.
- Before commencing their work **students** are required to send an e-mail to the lecturer responsible for the practical (see above; please add your direct supervisor in cc!) including the following information:
    - Names,
    - Student nos.,
    - e-mail addresses of both students in the group,
    - Topic of the practical research project
    - Name of direct supervisor (if not from the list including contact details),
    - Agreed timeframe of the work.

    If you do not register yourself courses cannot be accepted! This will be strictly enforced in the future. It is not acceptable to ask the direct supervisor to do this for you!
- If you do not get feedback by the responsible lecturer without an automated absence reply within a week you can assume that your registration was successful and accepted.
- Group reports are due six weeks after the end of the practical work. Revisions are to be submitted within two weeks after the draft has been reviewed by the supervisor. Delays in submission will substantially affect the final grade, or, in severe cases, lead to failure of the course.
- At the end of the practical course a conclusion colloquium is designated. This can be performed in different ways, either in a discussion within the course with the supervisor, a short PowerPoint presentation in a workgroup seminar or in another kind of concluding audit.
- Grades are based on the practical laboratory work, the written report and the conclusion colloquium.
- The **student** submits the final report, the direct supervisor the date of final report submission and a grade suggestion to the responsible lecturer who collects all grades and regularly submits them to the examination office.