

RULES FOR ORGANIZING THE STATE DOCTORAL EXAMINATION IN MATHEMATICAL ANALYSIS (P4M3)

1. EXAM STRUCTURE

1.1. For the purposes of the state doctoral examination, two lists of topics marked as

- **List A**, containing topics related to general knowledge of mathematical analysis;
- **List B**, containing more specialized topics in mathematical analysis.

All topics on both lists will largely serve to expand the student's knowledge beyond the requirements for the state master's examination.

1.2. The topics will have a reasonable scope, typically 70-100 pages depending on the difficulty of the material, which should roughly correspond to the content of at least one semester lecture with a workload of 2/0 hours. Each topic will include a detailed syllabus, a list of required literature including page numbers, and a basic list of pedagogical or scientific staff capable and willing to examine the given material (for each topic, it will be ensured that there are at least two such individuals available in the Czech Republic).

1.3. The supervisor of a student preparing for the state doctoral examination will select exactly one topic (denoted by **a**) from List **A** and exactly one topic (denoted by **b**) from List **B**. To these two topics, they will add a third topic (denoted by **c**), closely related to the main subject of the student's study or research. Topic **c** may or may not be included in the current version of Lists **A** or **B**. Its scope should be similar to the topics on Lists **A** and **B**. The supervisor will propose at least one examiner for topic **c**. The total set of three chosen topics **a**, **b**, **c** will be submitted by the supervisor to CDS (Committee of doctoral studies) for approval as soon as possible after the start of the relevant doctoral studies, but no later than before applying for the examination date.

1.4. CDS will review the supervisor's proposal and carefully assess the appropriateness of the chosen combination and the scope of topic **c**, if this topic has not already been listed on any of the lists prior to the examination. After a thorough evaluation of the proposal, CDS will decide by vote whether to approve the supervisor's proposal. Then CDS will inform the supervisor of the outcome of the vote. In the event that the proposal is not approved, CDS will notify the supervisor of the list of deficiencies and ask them to address them.

1.5. After CDS approves the supervisor's proposed list of topics **a**, **b**, **c**, CDS will propose the composition of the examination committee to the dean of the faculty for approval.

1.6. After the examination committee is appointed and the examination date is set, CDS will inform all members of the examination committee in detail about the approved syllabi of topics **a**, **b**, **c** and assign one examiner to each of the topics. None of the three examiners may also be the supervisor of the student, even in the case of topic **c**.

1.7. The examination will consist of three parts, in which questions will be asked about the respective topics **a**, **b**, and **c**.

1.8. Lists **A** and **B** will be continuously open for additions. Anyone can submit a proposal to CDS to include another topic in one of the existing lists. For example, after each examination, topic **c** may be added to one of the lists (if it was not already on that list before the examination), so that it can be used in the future by other students who may be interested. Each proposal to include a new topic in one of the lists submitted to CDS will be carefully evaluated.