

IBZ specific guidance for the Aptitude Colloquium Exam

This document is intended to accompany the [ETH](#) (also [here](#)) and [D-USYS](#) regulations.

Goals

The aptitude colloquium is a required exam for all PhD students at ETH Zurich, and passing it marks our confidence in a PhD student's ability to plan an interesting and scientifically valuable research project and conduct research necessary to complete a dissertation. The goal of the aptitude colloquium exam is therefore to A) give the candidate the opportunity to demonstrate that they are capable of planning, executing, and communicating a scientific project; B) assess whether the candidate is recommended to continue their doctoral studies (outcome can be pass, fail, or fail but can retake) and C) provide the candidate feedback on their doctoral plan (while there is still time to alter approaches).

Evaluation of the Aptitude Colloquium exam is based on the following:

- A doctoral plan: submitted to the USYS doctoral administration and the Aptitude Colloquium Committee at least 3 weeks prior to D-USYS administration and your committee.
- A 20-minute presentation (during the first 20 minutes of the Aptitude Colloquium)
- 40 minutes Q&A. Questions may be about the plan, preliminary data presented during the presentation, or any other topic that is related. This is followed by the evaluation (a discussion by the members of the Aptitude Colloquium Committee without the student).

See page 3 for an idealized timeline for a graduate student in IBZ / D-USYS. Note that the Aptitude Colloquium Exam is only required for graduate students admitted after 01.01.2022.

Composition & Roles of the Aptitude Colloquium Committee

The aptitude committee will be at minimum composed of the candidate's supervisor (of the doctoral thesis), the 2nd advisor, and a chairperson, with the following general roles and requirements:

Supervisor & Secondary advisor: The overall role of the supervisor and secondary advisor is to mentor and guide the candidate throughout the duration of the PhD thesis. As experts in the field, they therefore play a key role in helping the candidate prepare for the Aptitude Colloquium. The candidate and the supervisor must identify a secondary advisor by the time of the Aptitude Colloquium (within one year of your start date) and the second advisor must attend and participate in the Aptitude Colloquium exam. Together with the Chair of the Aptitude Colloquium, the supervisor and secondary advisor are responsible for deciding the outcome of the exam.

Chair of Aptitude Colloquium: The role of the chairperson is threefold. First, they should ensure the colloquium runs smoothly; that is, introduce the candidate and procedures and keep time (~20 minutes for the presentation; ~40 minutes for Q&A). They are also there to ensure the process is both fair and rigorous. Finally, as a member of the Aptitude Colloquium together with the supervisor and secondary supervisor, the Chair can contribute to deciding the outcome of the exam. As such, they can also ask questions (based on the written proposal and presentation), although being less involved in the research they may ask no or fewer questions. Note that the chairperson does not become a member of the candidates committee nor are they the chair of the candidate's dissertation committee (although they are not precluded from either role).

The candidate: The candidate's job is to demonstrate (to the Aptitude Colloquium Committee) that they are ready and able to independently conduct research, to plan experiments / observations, see the relationship of their thesis chapters and work to broader themes and topics within Environmental Sciences, do the work necessary to get and analyze data, and communicate findings to scientific peers through presentations and scientific publications. Candidates will demonstrate this through their written doctoral plan, the 20-minute presentation, and their ability to answer questions about their proposed research and related topics.

Other members: If a student has already identified other members of their committee, they can expand the aptitude colloquium committee to include them or other project experts (e.g., project collaborators). We recommend this is talked over with the supervisor.

Aptitude Colloquium FAQ

- *Is this an exam or a discussion?* It is an exam (similar to the general exam / qualifying exams common at other institutions, especially in the USA). In addition to developing a research proposal that is convincing and holds

together and giving a talk on the research, the candidate should therefore be prepared to answer questions justifying experimental choices, explaining preliminary data, and discussing conceptual ideas relevant to the proposed work.

- *Is the Aptitude Colloquium open to the general public or members of the candidates group?* IBZ professors have decided that the Q&A session is not open to anyone but the candidate and the Aptitude Colloquium. However, if the supervisors and the chair of Aptitude Colloquium agree and the candidate desires this, the presentation can be open.
- *Who can ask questions?* The supervisor, the co-supervisor and the Chair of the Aptitude Colloquium, plus additional members of the committee (if present), can all ask questions.
- *What kind of questions will be asked?* Questions about the proposed research (based on the research proposal and the presentation) and on any topic supervisors and the chair feel the candidate should be knowledgeable about, given the chosen research topic, are all possible. These could include questions about hypotheses, preliminary data, the relationship of the proposed work to that of major work in the field, statistics, etc.
- *What kind of room should be reserved?* The candidate should make sure to reserve a room with a white board or flip chart, as they could be asked questions that requiring them to draw figures, equations, schematics, etc on the board.
- *How does the Aptitude Colloquium relate to the Annual Status conversation (required by ETH) and 1st year meetings (required by some graduate programs)?* These meetings are different from the Aptitude Colloquium, as they have different goals, required attendees, and forms to fill out and therefore should ideally be scheduled at different times. The first annual status conversation “must take place no later than 12 months **after the date of the passed aptitude colloquium**”, so is not required until after the Aptitude Colloquium is passed. Various PhD programs may require 1st year meetings – these cannot be completed during the 1.5-hours needed for an Aptitude Colloquium (there simply is not enough time). If the supervisor and candidate would like to schedule such a meeting on the same day as the Aptitude Colloquium, we recommend allocating extra time after the Aptitude Colloquium and excusing the Chair of the Aptitude Colloquium after they have concluded their chairing role.

Organizing your Aptitude Colloquium

The candidate is responsible for organizing the logistics of their Aptitude Colloquium Exam. This includes identifying a chairperson, finding a 1.5-hour time slot in which the Aptitude Colloquium takes place, and finding a room in which it takes place. **Timeliness will be critical to this.**

Only USYS professors (assistant, associate and full) at ETH can serve as the chair of the aptitude colloquium – see below for a list and email addresses. IBZ professors have all agreed to serve in this role if requested by an IBZ doctoral student, if the request comes at a reasonable time (2-3 months before, minimum). We recommend you involve the Chairperson in the scheduling decision (a polling app like [whenisgood](#) will be important). If you have trouble finding a Chair, we suggest you ask your supervisor to help, and potentially ask them to bring your request to an IBZ IL meeting (once a month, first Monday – but not in the summer).

IBZ professors who can be Chair of the Aptitude Colloquium for IBZ students

Sebastian Bonhoeffer - seb@env.ethz.ch

Tom Crowther - tom.crowther@usys.ethz.ch

Alex Hall - alex.hall@env.ethz.ch

Janneke Hille Ris Lambers -

janneke.hillerislabbers@usys.ethz.ch

Jukka Jokela - jokela@env.ethz.ch

Bruce McDonald - bruce.mcdonald@usys.ethz.ch

Greg Velicer - gregory.velicer@env.ethz.ch

Alex Widmer - alex.widmer@env.ethz.ch

Timeline for the Aptitude Colloquium Exam, required* and recommended^ for the candidate (notes)

| Timing | Task / to-do for the candidate |
|--|---|
| Year 1* <i>The candidate is required to complete the Aptitude Colloquium Exam within the first year, but it can also be earlier than a year.</i> | Work with your supervisor (and secondary supervisor) to identify your thesis topic and specific chapters, as well other activities (e.g. collaborations, teaching) you will conduct during your doctorate. |
| < 8 months after starting your doctoral studies^ | Identify & invite a secondary supervisor (in collaboration with your supervisor) |
| 3 months before the colloquium^ <i>Earlier is even better – your committee is probably very busy and it's hard to find a time when everyone can meet. Also keep in mind common times when scheduling is difficult – e.g. summer (field work, vacation, conferences)</i> | <ul style="list-style-type: none"> Identify an IBZ professor willing and able to chair your Aptitude Colloquium. Ask your supervisor for help if you have trouble. Identify a >1.5-hour time slot (using a poll like whenisgood) that you and the entire Aptitude Committee (including chair) can meet. Find and reserve a room for the Aptitude Colloquium. Ideally, you would reserve a room for 2 hours giving you ½ hour before, and ½ hour after the Colloquium. You will need <i>at least</i> 1.5 hours. You can first find a room and time before you identify a chair, but we recommend the reverse procedure. |
| 1 month before the colloquium | Submit the Aptitude Colloquium form to D-USYS |
| 3 weeks before the Colloquium* | Send your doctoral plan to the D-USYS administration and your entire Aptitude Committee. See the ETHZ and D-USYS guidelines for a description of what should be included, length, etc. |
| 1 day before the Colloquium^ | <ul style="list-style-type: none"> Send a reminder (including time and place, ideally directions) to your Aptitude Committee Check that the room you have reserved has a chalkboard / whiteboard with working pens, or arrange for a flipchart. |
| Half an hour before the Colloquium^ | Test projection and audio and remote options (e.g. zoom) in the room. |
| Colloquium* | <ul style="list-style-type: none"> < 1 minute – Chair introduces the procedure 20 minutes – presentation by candidate 40 minutes – Q&A from Aptitude Committee (including the Chair) < 20 minutes – discussion by Aptitude Committee (without the candidate) on the outcome (pass or fail); without the candidate (using this form, to be submitted to D-USYS) <10 minutes – communication of the decision by the Chair to the candidate, including suggestions for improvement |
| 1-2 days after the Colloquium^ | <ul style="list-style-type: none"> Check with the chair of the Aptitude Colloquium to make sure they have submitted the decision form Check with the members of the Aptitude Colloquium for any feedback on the written and oral parts of the exam |
| Within 3 months of the Colloquium (if failed, but allowed to retake)* | <ul style="list-style-type: none"> If you failed the Aptitude Colloquium, but are allowed to retake it, you must do so within 3 months |