Zoom: A complete online lecture setting **with interactions** How To Do

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This document provides some practical hints on how to use Zoom as a complete substitute for classroom lectures, in particular it provides a step-by-step manual on how to implement such a setting and how to use it alongside with some remarks about possible pros and cons.

Of course, the short list of options is by far not complete. Nevertheless, it covers the most important features.

Last but not least, I'm always glad to help, just contact me at laura.keller@math.ethz.ch.

Contents

1 Preparation - get started with Zoom

Before you even can start setting up your lecture or exercise class using Zoom you need a **licensed account**.

In order to get such a licensed account go through the following steps:

i) First of all, in any case you have to create a basic account via the option "Create account" on the page `https://ethz.zoom.us` (please use your "username@ethz.ch" address).

ii) Once you have a basic account you can request an upgrade by sending a corresponding email to zoom@id.ethz.ch (or to servicedesk@id.ethz.ch).

And here some important general remarks:

- Participants do not need an account in order to participate in a Zoom meeting, the only thing a participant needs is a corresponding URL address.

- Participants in addition are not even required to have the Zoom client, although it is recommended to install this client.

- Note that a basic account only allows meetings of 40 minutes with more than 3 participants.

- For further information, see the page `https://ethz.ch/services/de/it-services/katalog/multimedia/video-konferenz/zoom.html`.
  In addition, there are several video tutorials available directly on the zoom page `https://support.zoom.us/hc/en-us` or even on youtube.
  And last but not least, you can also contact me directly at laura.keller@math.ethz.ch.

2   Possibilities of interactions

Here follows a short overview about some possible interaction ways and features - as usual together with some practical hints.

- **Chat**
  The chat option is very popular among students since it is more anonymous that the option of raising virtually the hand and contribute orally. Moreover, it is also very close in handling to chat features in other communication tools like Skype or Microsoft Teams.

  Note that the chat option does not require any activation. It is active in any meeting you schedule.

  I usually have the chat window open and from time to time make a micro break of just about a minute in order to have a quick look at what is going on in the chat. If I identify a question which should be discussed I do so. But often the effects of peer instruction are very strong and fellow students have already given the correct answers.
  So, this feature is a very nice tool to keep yourself updated on potential questions from the students and in addition integrates the help among students.

  In order to access the chat, either there is already a corresponding icon in the control bar which usually you find below the active window of Zoom on which you just click (orange circle in the screen shot below) or access the chat using the option "More" in the control bar and then select "Chat" (see screen shots below).
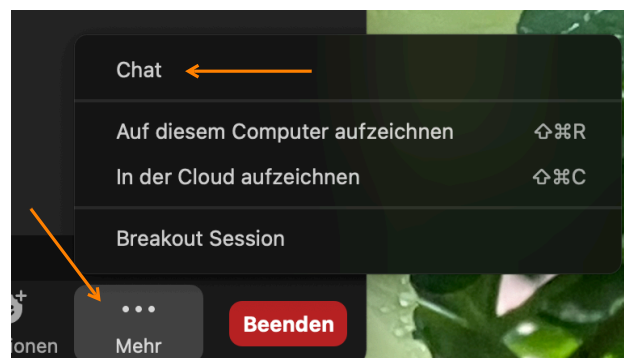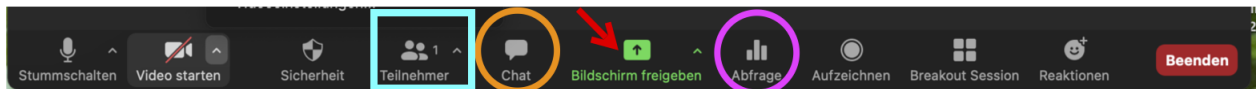

- **Virtual hand raising**
  This is another option which allows you to give the students the opportunity to ask question or give answers orally.

  Note that this option as well does not require any activation. It is active in any meeting you schedule.

This feature implies that students "make their question public" which - in particular in large lectures - might not be so popular.

As a participant, if you want to raise your hand click on "Participants" in the control bar (cyan square in the screen shot below) and in the new window that is opened click on "Raise hand" (see screen shots below).
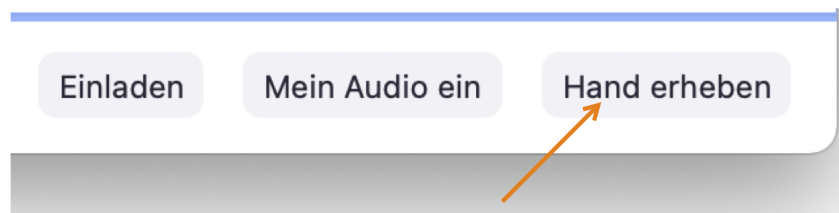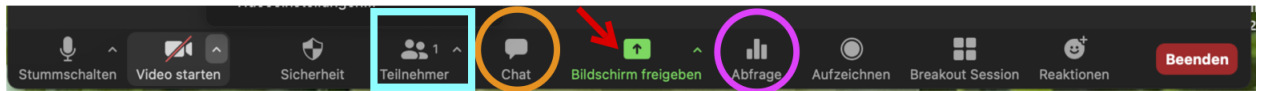

The easiest way to see whether someone has raised his / her hand is to have an open window with all the participants listed. In order to access this list of all participants, just click on the icon "Participants" in the control bar.
As a host, if there are raised hands you see a coloured hand symbol next to the person's name (see screen shot).
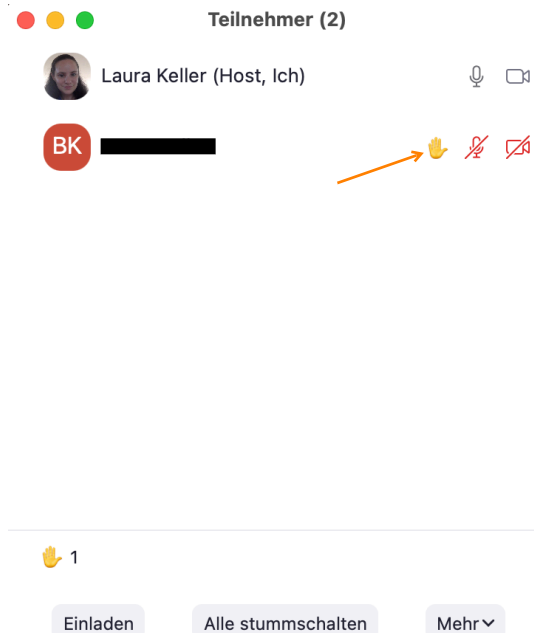
In order to give this person the floor, move your mouse onto the person's name and unmute the person so that all participants can hear what he / she says (see screen shot).
If by accident someone raised his / her hand you can also manually lower a hand by clicking on the corresponding icon (see purple arrow in the screen shot below).
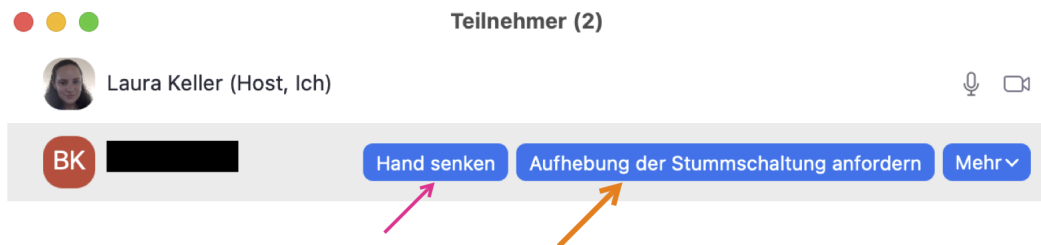

- **Polling**
  This is a feature which can be used in many different ways and in a certain sense can also serve as a substitute for the EduApp - the advantage being the all the interactions take place on the very same platform.

  Note that this option is not automatically active. You have to set it up in the following way: First of all, go to the ETH Zoom portal page https://ethz.zoom.us, log in, choose the option "Settings" on the left side, and scroll down in the "Meeting" category until you find "Meeting Polls". Activate this option!
  Once you have done this, you have to create singular polls for your activities.
  A poll for a specific meeting is set up as follows: Go to the ETH Zoom portal page https://ethz.zoom.us, log in, choose the option "Meetings" on the left side, and select the meeting for which you want to create a poll (see screen shot below, in this example I want to create a poll for my meeting "Test").
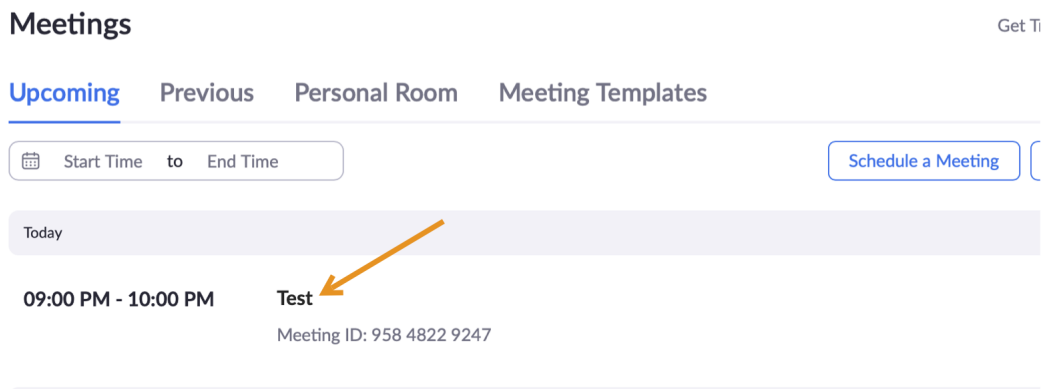
Having done so, scroll down this page until you find a section for setting up polls where you either can create or add a new poll (see the two following screen shots).
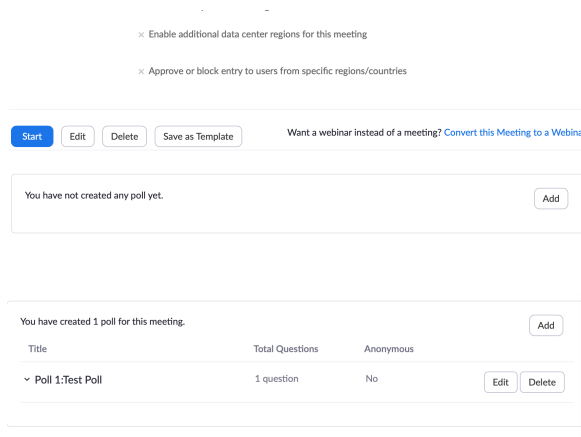
In any case, click on "Add" and create the poll you want. As an illustration, you can see the screen shot of a poll I created.
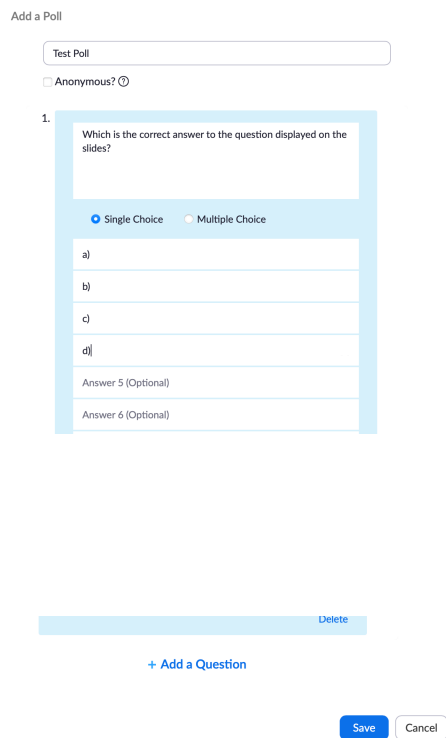
Once you have created your polls, you can use them in your lecture.
In order to access and use your polls, just click on the corresponding button in the control bar

(purple circle in the screen shot below - note that this icon appears only if you have created polls).
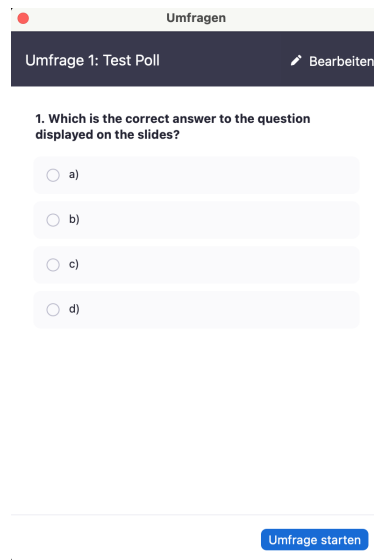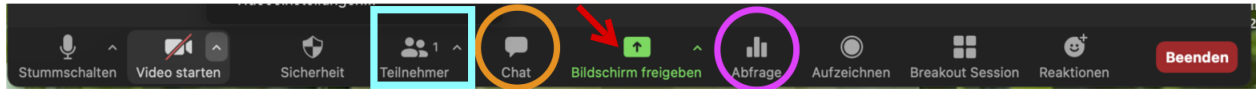I do not discuss here all the steps you go through when using your poll since it is very intuitive (I just prove a screen shot of the first window that will open once you start a poll)!

- **Final remarks**
  Not all groups of students react in the same way. Often the bigger the groups are the more they tend to use anonymous features like the chat option instead of "exposing" themselves by contributing orally.
  In dependence of you settings - in particular if you give your students the opportunity to unmute themselves - it might occur that "out of the blue" you hear a question or request.
  So, it depend heavily one's personal preferences and how much you like (or dislike) multitasking. Recall that the more options the students have, the more communication channels you as a lecturer have to handle, or have an assistant handling them.

- **My personal choice**
  According to my experiences, the chat option is by far the most popular feature among students. And for me as a lecturer it is great to see their questions and / or requests but I can simultaneously also very fruitfully integrate the knowledge of other students giving answers to their colleagues.
  Apart from that, it can even compensate - up to a certain extent - the fact that in a virtual lecture setting the students lack the classroom atmosphere and the easy accessible possibilities to chat with others.
  In smaller lectures students also use the possibility to ask a question by just unmuting themselves (I give them this option in order to make the lecture more lively).
  The option of virtually raising their hand seems to be "more complicated" and I personally think that it rather a feature for more formal activities like seminars with invited speakers.

3 Setting up the online lecture

At this point, it is time to set up your first Zoom meeting or lecture!

Below, you find a **list of the most important points you have to consider in the set up** as well as some hints and comments.

At the end of the list of points you need to consider in the set up you find as well a screen shot of an example of a suitable setting I usually use.

- **Preparation**
  Go to the ETH Zoom portal page https://ethz.zoom.us, log in and choose the option "Meetings" on the left side (see screen shot below).
  Once you have done this, go through the points mentioned in the following list.
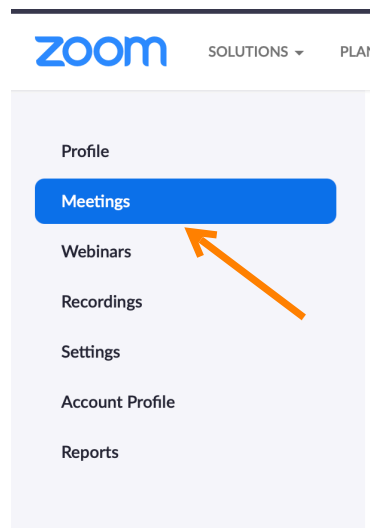
- **First step: Get started**
  First of all, you have to schedule your meeting. Start by clicking on the corresponding button (see screen shot below).

- **Second step: Choosing the settings you want**
  In the list below I just indicate the points where you have to give some information. Categories of the setting that I do not mention can be left as suggested - unless you have particular requirement (see also the check list on https://ethz.ch/services/de/it-services/katalog/multimedia/video-konferenz/zoom.html).
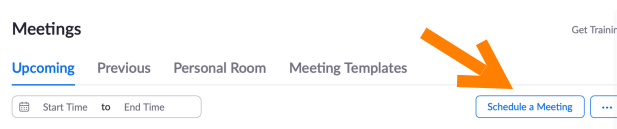
  Topic (Meeting name)
  In particular for a lecture, it is recommended to add the lecture number together with the official title of your lecture.

  Time settings
  Under "When" indicate the day of the first lecture.
  Indicate the approximate duration of the lecture (this is only for scheduling purposes).
  If your lecture takes place on various day with different times choose a time frame which covers all the times.
  If your lectures takes places twice a week or even more often, choose first of all the option "Weekly" in the category "Recurrence",
  choose "Repeat every 1 week",
  choose the days of the week when your lecture takes place and finally indicate for how many weeks the meeting should be repeated (usually 14 for a semester long lecture), or alternatively indicate the day of the last lecture.

  Security
  I usually activate the "Waiting Room" option in the section "Security".
  This in particular allows you to prepare everything like e.g. external tablet, screen sharing etc. before anyone else is in the meeting.
  In order to increase further the security of your meeting (e.g. in order to avoid Zoom bombing) you can set a password.

  Video
  I usually set the host video on. This implies that your students can see you during the Zoom meeting / lecture. I personally think that this makes the meeting /lecture more personal and more like a classroom lecture.
  Remember also to look into the camera from time to time to establish a "connection" to the students.
  On the other hand, I suggest to switch off the participants video. Note that in any case the participants can activate their video at any time. If there are issues with the internet connections it might be advisable to switch off all videos.

  Audio
  My suggestion is to choose "Computer Audio".

  Meeting Options
  Do not select "Allow participants to join anytime" in order to increase the security of your meeting.
  Select "Mute participants upon entry". This is quite important to reduce noise and improve the sound quality. Note that if you want the students to participate orally you can either unmute them once it is needed or e.g. in a seminar deselect this option.
  If you want to include activities in smaller groups you might want to select the option "Breakout Room pre-assign".
  Select "Automatically record meeting" and there choose the option of the cloud recording. In particular, in view of accessibility to all students the recording is very helpful.

Alternative Hosts
Here, you can e.g. indicate the Zoom account of your assistant. This is particularly important in a setting where someone different from the lecturer is dedicated to answer the questions in the chat (see also comments on the chat above).

Important: Do not forget to share the URL / meeting ID of your Zoom meeting / lecture with your students!
The necessary information can be found once you are logged in to your account under the category "Meetings".

Schedule a Meeting

Topic | Mathematik II 401-0282-00L

Description (Optional) | Enter your meeting description

Use a Template | None

When | 23.02.2021 | 8:00 | AM

Duration | 2 hr 0 min

Time Zone | (GMT+1:00) Zurich

☑ Recurring meeting **Every week on Tue, Thu, until May 30, 2021, 28 occurrence(s)**

Recurrence | Weekly

Repeat every | 1 | week

Occurs on | ☐ Sun ☐ Mon ☑ Tue ☐ Wed ☑ Thu ☐ Fri ☐ Sat

End date | ⦿ By | 30.05.2021 | ☐ After | 7 | occurrences

Registration | ☐ Required

Security | ☐ Passcode

Only users who have the invite link or passcode can join the meeting

☑ Waiting Room

Only users admitted by the host can join the meeting

☐ Require authentication to join

Video | Host | ⦿ on ☐ off

Participant | ☐ on ⦿ off

Audio | ☐ Telephone ⦿ Computer Audio ☐ Both

Meeting Options | ☐ Allow participants to join anytime

☑ Mute participants upon entry ☑

☐ Breakout Room pre-assign

☑ Automatically record meeting ☐ On the local computer ⦿ In the cloud

☐ Enable additional data center regions for this meeting

4 (Immediately) Before the lecture

Now I put together the most important steps one should go through immediately before the lecture.

- **Open the meeting**
  Go to https://ethz.zoom.us, log in, go to the list of your schedules meeting, select the one you want and start it.

- **Share content**
  In order to show your students your slides - or a virtual whiteboard, click on "Share Screen" (see red arrow in the screen shot below).
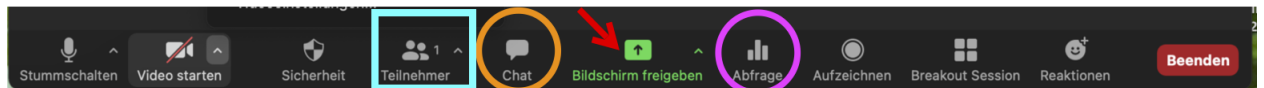

Once you clicked on that icon, you can choose between sharing a certain window, a virtual whiteboard or an external tablet (see screen shot below).
If you use an external tablet as a substitute for the blackboard I recommend you to use the option "iPhone/iPad via cable" since it is much more stable.
Note that the shared screen should appear on your own screen such that you see all its content. If not, not all of it might be seen by the students.
A hint for MAC users: Once you have connected your table to your computer or laptop it might occur that once you open the sharing option your external device seems not to be connected. In that case, open the "Finder", on the left hand side select your external device and confirm that this device an be trusted.
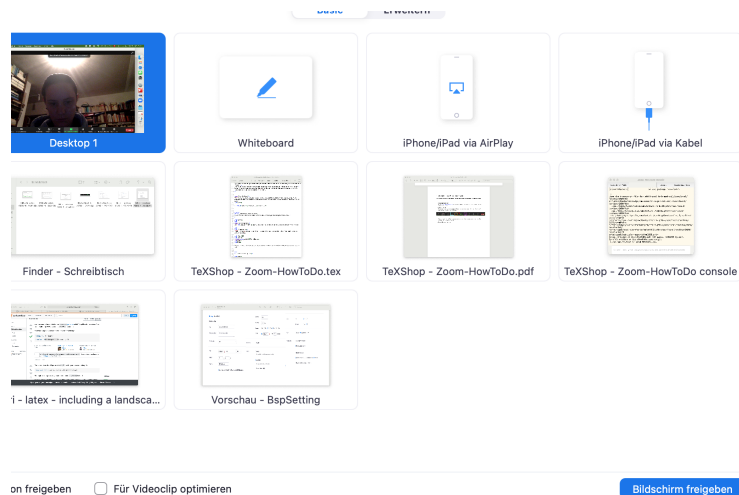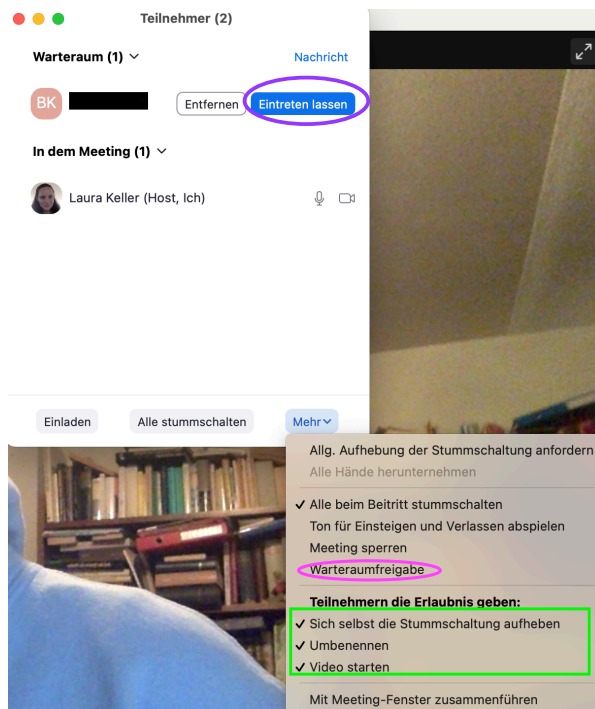
- **Open the waiting room**
  If you have activated the waiting room, now it is time to let your students enter the meeting. With an activated waiting room, you see how many students are waiting in the list of the participants (see screen shot below, note the red dot).
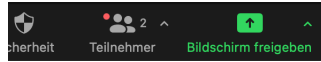
So, now click on the list of participants in the control bar, click on "More" and deselect "Enable Waiting Room" (purple circle in the screen shot below), choose the appropriate settings concerning the potential possibilities of the students to unmute themselves, to rename themselves etc. (green square in the screen shot below) and last but not least click on "Admit all" (violet circle in the screen shot below). Now the students are participating in your lecture / seminar /exercise class.

Note that the students - while they are in the waiting room - see a screen that tells them that within a short moment the meeting will be opened (again, see the screen shot below).

× −

Warten auf den Host, um dieses Meeting
zu starten

Um 9:00 PM anfangen

Test

Wenn Sie Moderator sind, **anmelden** zum Start dieses Meetings

Testen Sie das Computer-Audio.

5 During the lecture

During the lecture it is important to regularly check the features you have activated.

- **Chat**
  I suggest to have an open chat window just from the beginning of the lecture on.
  Such a window can be open as follows: In the control bar (usually at the lower boundary of the speaker window) click on "More" then select the chat or alternatively click on the corresponding icon in the control bar or alternatively click on the corresponding icon (see screen hots in chapter 2).

- **Raised hands**
  Similar to the chat, it is strongly recommended to check regularly if someone raised virtually his / her hand.
  The most simple solution is to have an open window with a list of all participants (see screen shot above in chapter 2).

- **Polling - an alternative to the use of the EduApp**
  Many lecturers use quite often the EduApp during their lectures.
  Unfortunately, in an online setting it might pose an obnoxious distraction using a second channel of interaction. So, I suggest to use the polling option in Zoom instead.
  And here is how to do so: At the point when you want to use a clickr question, display the question via Zoom - most simply by writing the question on e.g. a slide and share is via the screen sharing option (most likely you already have a shared screen so just add a suitable slide). In doing so, I strongly suggest to put all the possible answers already on the displayed slide (it makes the whole precess much easier).
 Then, open the polling and start it.
  Once there are enough answers close the polling and - if you want - share the results.
  In chapter 2 you can find a step-by-step manual on how to set up a poll.

  If you want to have an open question I suggest to invite your students to submit their answers via chat or by virtually raising their hands.

  An alternative is that you still use the EduApp - possibly in a way such that the students can answer your question before the lecture.

On the next page you can see how a typical screen looks like in my setting of a Zoom lecture: I have an open chat window (orange), an open window of the participants (cyan), a window with my personal notes (blue) and a shared window which for me is in the background since a see it as well on my external tablet (light green).
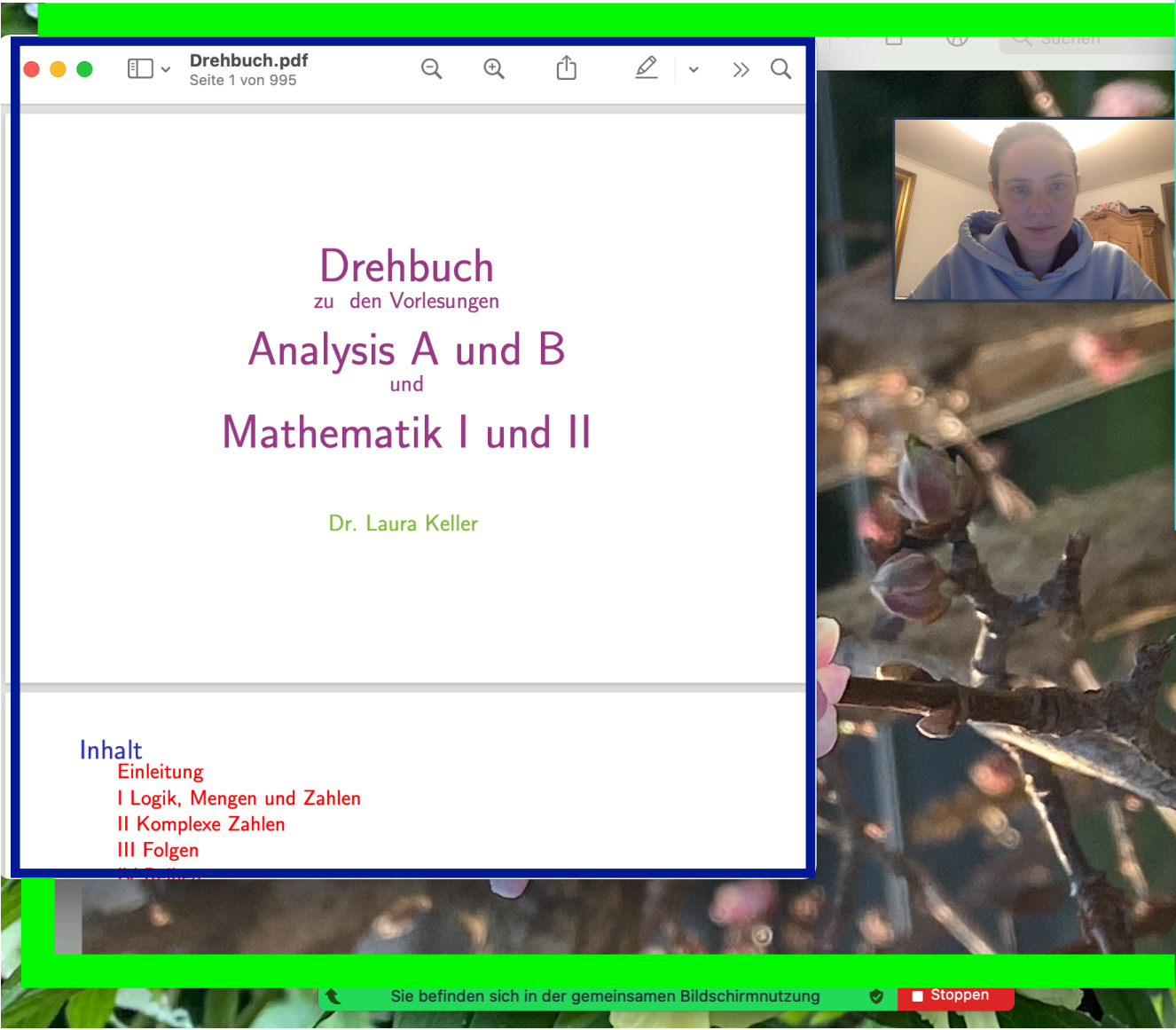
Drehbuch
zu den Vorlesungen

Analysis A und B
und

Mathematik I und II

Dr. Laura Keller

Inhalt

Sie befinden sich in der gemeinsamen Bildschirmnutzung ■ Stoppen

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Teilnehmer (1)

Laura Keller (Host, Ich)

Einladen   Alle stummschalten   Mehr ⌄

Chat

Versenden an: Alle

Tippen Sie Ihre Nachricht hier...

6 After the lecture

After the lecture there are just a few things left to do, in particular the sharing of the recording.

- **Sharing the recording**
  If you have activated the recording option of your lecture after the lecture you receive an email with toe links: One which allows you to cut the recording - if necessary, the second one is the one you should communicate to you students.
  Alternatively, you can access the recordings directly on the user portal of Zoom, `https://ethz.zoom.us`, see screen shot below.
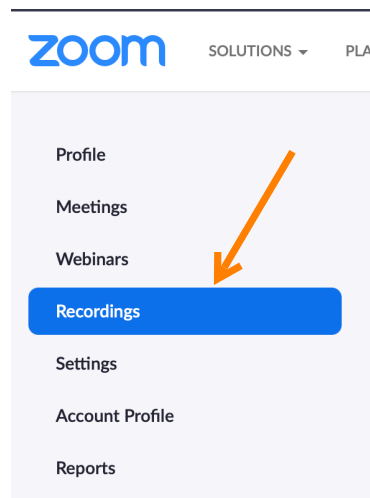
- **Sharing the chat (optional)**
  As mentioned above, it is possible to automatically save the chat but I personally would not do so. Note that once this option is activated also the students can download the chat.
  I usually just do a screen shot of the chat in order to have an option to double check whether all the questions have been answered.

7 Some finale remarks and further options

Of course, Zoom offers a bunch of other features which I did not discuss here. Below you can find a short list of some features that might be interesting to check out.

- **Breakout Room**
  This option allows you to split up one meeting into several smaller meetings. So, if you have activities in smaller groups or question and answer sessions in your lecture/seminar/exercise class this might be an option.
  Basically, there are two variants of this option: Either you have predefined groups of the participants can spontaneously choose / be assigned to a group.
  If you think that this feature might be useful or just want to learn more about it please se the documentations about first steps with breakout rooms and about setting up predesigned breakout rooms.
  Note that it is also possible that participants choose freely a breakout room. The host of a meeting can decide wether the participants have to go to a pre-assigned breakout room or can choose where to go.

  An alternative to split virtual meetings is offered e.g. by the platform GatherTown. It works basically in a similar way to Zoom but there are some nice supplementary features as e.g. the possibility to simultaneously work on *one* shared virtual black board (which support also latex) or the possibility to just see and hear other participant that are close to you (as in a physical room).

- **Ideas for exercise classes**
  What concerns the situation of exercise classes, I refer on one hand to the FAQ document of Prof. Marloes Maathuis and on the other hand to the following document here.

- **Using Zoom for podcasts**
  If you prefer using podcasts for your lecture, you can use Zoom as well. In that case, you record your lecture - or just a sequence that you want to share in a virtual way with your students - using the same setup as described above but just without any participants.

A   Some remarks about oral exams using Zoom

This final section of the present manual is dedicated to the question of how to use Zoom for oral exams.
The following indications are the official guideline of ETH and should also be provided for your students who have to take an oral exam via Zoom.

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

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STUDENT GUIDELINES FOR ZOOM-PROCTORED ORAL EXAMS

Due to the Corona situation, selected exams will be conducted online in individual settings. To enable oral exams, they will be conducted online via the video-conference tool Zoom. Your examiners will be ETH lecturers and teaching staff. As in face-to-face exams, a witness will be present online.

Video data may be recorded subject to prior informed consent by you; if your examiners expect to record your exam, but you do not agree, it will be left to the judgment of the examiner on how to proceed – this may include cancellation or postponement of the exam. If recordings are made, this will be clearly visible to you by a window asking you to confirm your consent prior to the start of the recording, and by a blinking red "Recording" icon in Zoom during the session. At no point in time will the video stream or the recording be made available to anybody but ETH personnel on a strictly need-to-know base. However, network connection data on bandwidth, latency, and incidents will be collected for quality assurance; these data are available to ETH staff only.

Preparation: your instructor will announce
1) date, time, and duration;
2) allowed aids (books, notes, calculators, data tables, etc.);
3) an email address or uploading functionality to transfer an electronic copy of your written notes, if so desired;
4) whether or not you will also be required to use postal mail to send your written notes to ETH (and the address to do so);
5) two independent ways of contacting the examiners in case of problems, including phone/SMS;
6) if the exam will be recorded; if so, the examiner will ask for your consent via e-mail and inform you who has access to the recording for what purpose, and where and how long it is stored; and
7) any other exam guidelines that require preparation on your part.

In any case, **you will need**
8) a computer with a camera, speaker, and microphone;
9) a stable broadband internet connection (ideally wired);
10) your ETH student ID;
11) the latest release of the Zoom client software; and
12) a camera, phone or scanner to reproduce your written notes electronically and transfer them to the examiners. Scanner apps on phones are perfect, since they also provide parallax-correction.

Failure to comply with these preparation guidelines by either party will render the exam void or result in a failing grade. In case of technical difficulties during the exam, these will be documented, and it will be left to the judgment of your examiners if, how and when the exam will be continued or repeated.

Starting the exam:
Make sure your place is well lit (no light from the back, no window) and quiet, preferably lockable. Test your setup prior to the exam using https://ethz.zoom.us/test
Your examiners will announce the Zoom Meeting ID for entering the exam at least 30 minutes prior to the beginning of the exam. This ID will need to be kept confidential. Please open the Zoom Client and type the meeting ID and your name as it appears on your student ID.
You will enter your exam session at least 5 minutes prior to the announced starting time. Depending on settings, you will probably find yourself in a virtual waiting area for admission.

Your examiners may be using your stored student photo to identify you or require you to show your ETH student ID in clear view of the camera.

Your examiners may take a static screenshot at this point in time for the exam record.
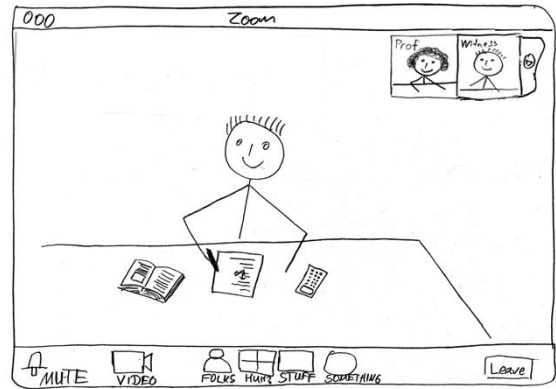
Taking the exam:

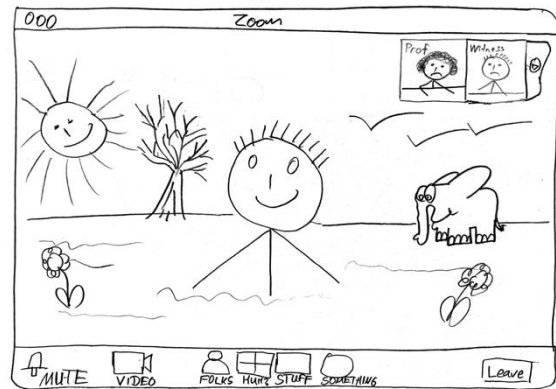|	
Your workplace should ideally be arranged such that the computer is generally out of reach, and that your face, hands, notes, aids, and background are clearly visible. The desk and the room should be clear of clutter. Your examiners may ask you to move the camera around the room. Camera, microphone, and speaker need to be turned on or under the control of the examiners (Zoom settings). Do not use earphones, headsets, or any earbuds (Bluetooth or otherwise, including noise-canceling devices).	
Virtual backgrounds need to be turned off; your surroundings need to be visible for the examiners. Once again, your examiners may ask you to move the camera around the room.	 **No**

If the examiners would like to see your work, please hold it up to the camera. Please make sure there is sufficient lighting. Clear and easy communication will contribute to your success on the exam!

After the exam:

While still in the video conference, photograph or scan your notes, if so required.

While still in the video conference, email or upload your notes according to the guidelines set out in 3) above, if so required.

Your examiners might delegate you to the waiting room to assess your exam; they will then bring you back to the meeting room.

Do not leave the video conference until your examiners tell you that it is fine to hang up.

If you are also required to mail your notes according to 4) above, please do so as soon as possible. Mail service tends to be somewhat unpredictable during Corona times, so the sooner the better.

Very best of success!