This document provides tips and techniques for planning and delivering an online course. The advice was collected from a large number of faculty and students who have experience with online courses. It will be updated as we get additional feedback and ideas.

You will need to redesign your course to account for some of the differences in the student experience and in delivery technology compared to in-person courses. This document covers the major decisions you will need to make to modify your course, and is divided into the following sections listed in this Table of Contents:

Considering the student experience

There are a number of challenges that many of your students will face in the current environment:

- **Location.** Some students will be located off-campus and face time-zone differences that will reduce their ability to participate in synchronous video meetings and to take exams at set times.
- **Health.** Student illnesses or family emergencies are likely to be more frequent than usual.
- **Focus.** Students working from home may face more distractions from family interactions and from connectivity issues.
- **Access/Resources.** Students may lack the ability to print documents such as assignments and exams.
- **Logistics.** On-campus students may face timing issues in transitioning from in-person classes to online classes (and vice versa).

These changes to the student experience could affect your deliverables in the following ways:

- **Exams will have to be online,** un-proctored, and open book. They may need to be offered at multiple times due to time-zone differences, and there may be more need for make-up exams.
- **Group work** could be impacted by lack of student co-location, time-zone differences, and illnesses. **Group presentations** may be more difficult to arrange due to these factors.
- **Class participation during synchronous video conferences** will be more difficult than usual. Some students will be unable to attend synchronous sessions. Students that do attend may have connectivity issues that limit their ability to be on camera and to participate freely.

Different instructors will attempt to solve these issues in different ways. As a result, students will face much more variety in course delivery than usual. Communication will be essential! Ensure that your grading policies and assignment expectations are clear in your syllabus. Also, be prepared to send frequent emails to students and/or announcements through Canvas (possibly before each class).

You should also be clear in your syllabus about policies for student absences. For attendance or homework, you may want to give every student one or two “free passes” to miss class without a grade penalty. For exams, you should make clear whether you will require the student to take a make-up exam on the official university make-up exam date (which is in the next semester). In any case, all students should report their illnesses or absences to the MBA and Undergrad program offices so they can be tracked in case there are any contact tracing issues. You should always require that the program office confirm the student’s absence rather than just working from their emails.
Once you get your class list, we recommend polling your students to get a sense for their situations. You can easily create a poll using a Canvas quiz, Qualtrics, Survey Monkey, or a Google Form. Suggested questions include:

1. Will they be on-campus?
2. If not on campus, what is their time-zone difference?
3. Will they have access to a reliable high-speed Internet connection?
4. Will they be limited in their ability to access various platforms that you might use (e.g., Canvas, Zoom, BlueJeans, YouTube, Google apps, Skype, etc.)?
5. What are their major concerns about engaging with the course?

You should also consider soliciting feedback from students during the term. We are all relatively inexperienced in online teaching (compared to in-person teaching), and mid-term feedback could provide useful guidance on course corrections. The MBA and Undergrad program offices have formal mid-term feedback forms. Alternatively, you could seek feedback through more informal surveys or discussions with small groups of students.

Choosing the delivery format

Wharton faculty teach using a wide variety of methods. There is no one ideal way to teach our students in-person, and there is no one ideal way to teach online. Based on student and faculty feedback, there are two methods that work well—synchronous only teaching and blended teaching—and one that generally does not—asynchronous teaching.

Note that, regardless of the delivery format, synchronous sessions will always be recorded and posted to Canvas. This policy is in place to allow remote students that cannot attend the sessions to have access to the course material. You will be able to restrict the amount of time these videos are available on Canvas. Students will receive warnings about unauthorized use of the videos. Even so, a good guideline is to never say anything during a synchronous session that you wouldn’t want to show up on YouTube!

Synchronous only teaching

The synchronous only option involves teaching all sections of your course via a video meeting during your regularly scheduled class times.

<table>
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<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<td>This method requires fewer changes to adopt your course material to online teaching and provides students the same amount of in-class engagement time with you and other students as they would get during an in-person session.</td>
<td>Students have difficulty maintaining engagement for 80 minutes in a video meeting and students may miss part of the material if they have temporary connectivity or work-from-home disruptions.</td>
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If you choose this method, you still may want to modify how much material you cover and how you engage with students. See the section Managing an online class below for details.

Blended teaching

The blended option involves pre-recording 15-30 minutes of videos for students to watch prior to class followed by 50-60 minute synchronous sessions via a video meeting during your regularly scheduled class times. The pre-
recorded videos cover basic material and the synchronous sessions involve more advanced material, discussions, or exercises. The synchronous session should be at least 50% of the normal session length to avoid student dissatisfaction about lack of faculty engagement.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>- Students are able to engage more completely for the shorter synchronous session.</td>
<td>- Requires more advance work by faculty to plan delivery of material (which may be difficult to split up logically) and to record videos.</td>
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<tr>
<td>- Students have a chance to digest pre-recorded material before live sessions.</td>
<td>- There is less time for synchronous engagement</td>
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<tr>
<td>- Remote students feel less disadvantaged because part of the course is delivered the same way to all students.</td>
<td>- Students may skip synchronous sessions if they feel pre-recorded material is sufficient.</td>
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**Video Resources**

For a video on tips for blending asynchronous and synchronous teaching, see: [canvas.upenn.edu/courses/1527073/assignments/8006656?module_item_id=18226019](canvas.upenn.edu/courses/1527073/assignments/8006656?module_item_id=18226019).

If you want to record short videos, Panopto records videos in an easy-to-use, free format that directly uploads to Canvas. For tips on using Panopto, see: [canvas.upenn.edu/courses/1527073/assignments/8006779?module_item_id=18226340](canvas.upenn.edu/courses/1527073/assignments/8006779?module_item_id=18226340).

If you want to record longer videos, Camtasia allows you to edit the video, splice together multiple clips, and layer on animations or other effects. You will have to buy this software. For tips on using Camtasia, see: [canvas.upenn.edu/courses/1527073/assignments/8006781?module_item_id=18226349](canvas.upenn.edu/courses/1527073/assignments/8006781?module_item_id=18226349).

**Asynchronous teaching**

This option involves pre-recording all of your course material and hosting only virtual office hours, without a synchronous session. Alternatively, this option could involve delivering one synchronous session and requiring the other students to watch the recording of it.

*We strongly advise against this approach for the entire course.* Students are generally unhappy with this approach because of the lack of interaction and engagement; students have said they felt cheated that they were paying full tuition for “Coursera MOOC” classes. However, this approach could be used sparingly to replace certain class sessions, especially later in the semester when the students know you better. See the “Blended teaching” section above for tips on recording videos.

**Managing an online class**

Every facet of course delivery—pre-class prep requirements, in-class delivery, out-of-class interactions—must be reconsidered when moving to an online format.

For an overview video on switching to online teaching, see: [canvas.upenn.edu/courses/1527073/assignments/8006642?module_item_id=18225999](canvas.upenn.edu/courses/1527073/assignments/8006642?module_item_id=18225999).

For instructors teaching undergraduate students, the Wharton Dean’s Undergraduate Advisory Board has produced a White Paper on best practices for online and blended learning: click here for an executive summary and here for the full White Paper.
Student prep for class

Students will face a large variety of platforms and interaction styles in their courses. Thus, you should communicate with students frequently about your expectations, including specifying the following:

- Required pre-class prep
- Material to have handy during the synchronous session
- Norms for interactions and questions during the video conferences

Because case discussions can be more disjointed online, some faculty provide case-specific guides to highlight the aspects of the case on which the discussion will focus during the synchronous session.

Another method for guiding pre-class prep is to create pre-class quizzes on Canvas.

- These quizzes can have auto-graded multiple-choice questions, with multiple attempts, to check the students’ knowledge of the basic facts covered in their pre-class material.
- They can also be used to have students give short open-ended answers to key case questions or prompts from the pre-class reading.
- Some faculty use the responses from the quizzes to warm call students during the video conference.

Setting up your course requirements as Canvas modules can make it clearer to students how they should prepare for class. For a video on how to use Canvas modules, see: canvas.upenn.edu/courses/1527073/assignments/7975481?module_item_id=18117410

Student participation during video meetings

It is difficult to cover the same amount of content virtually as can be done in person. Student questions and answers all involve a bit of delay, whether spoken or on chat. Students have difficulty staying focused due to “zoom fatigue” and distractions in their environments. Some students will need more transition time if they have in-person and virtual classes back-to-back. Thus, you should try to remove some material from the synchronous video meeting to better manage the time.

Student participation is the most difficult aspect of an online course. It may take some trial-and-error to find the right approach for your material and for your teaching style. Here are some considerations:

- Most students are reluctant to interrupt to ask questions orally. You need to establish norms for whether and how a student could do so.
- There are “raise hand” features in the video meeting platforms, but they are not obvious unless you have the correct window displayed.
- Requiring students to be on camera at all times involves a trade-off. Having students visible provides a more interactive experience for everyone, and is a good default norm for the class. But, some students may have bandwidth issues where they need to mute video to get a better connection.

Here are options for when you want to ask questions to the students in a case discussion:

- Cold calling is generally more effective than asking for volunteers because many students are reluctant to jump in to speak on the video meeting. Follow usual best practices on cold calling: establish the norm and stick to it, and consider allowing students to opt-out in advance if it is not a good day for them.
- Warm calling based on pre-class responses on quizzes or discussion boards allows some control over the
variety of comments you elicit and ensures that you are calling on students that are prepared to participate. Some faculty had student teams sign up on Google doc to volunteer in advance to lead parts of the discussion.

- Another effective technique is to ask a question of the students and have them send short answers through chat. You can read aloud the answers that help move forward the discussion and call on certain students to elaborate their answers. You can also give participation credit for everyone that chats a response.
- Some faculty devote class time to assigning students to breakout rooms to have small-group discussions. When the class reconvenes, the instructor calls on a group leader to report the discussion. Breakout groups are discussed further below.

Here are options for when students want to ask you questions:

- Chat questions can be effective because they let you pre-screen the questions you answer. But, chat questions are often delayed due to typing time. You may want to pause at natural stopping points and address chat questions then (as opposed to trying to address them as you see them).
- Some students will want to direct message chat questions to avoid asking them publicly. This is an effective way to get more sensitive questions or comments into the discussion. But, you have to be careful to notice that the chat is a DM and not mention the student’s name.
- One effective chat technique is to have students send a single letter through chat (e.g., Q for question, C for clarifying comment) and to call on the student when you see the letter. That allows students to ask their question when you are still on the topic, but of course, you can’t screen the questions.

Polling through Poll Everywhere or the native polling function in the video meeting greatly increases student engagement. Poll Everywhere allows polls to be integrated into a PowerPoint presentation by downloading a plug-in (or you can just display the website). All faculty and students can get free Poll Everywhere accounts with their Wharton emails, and if you create a group, you can track student participation in the polls. For a video on how to use Poll Everywhere, see: canvas.upenn.edu/courses/1527073/assignments/8008055?module_item_id=18229416

Mixing up the pedagogy during the sessions is an effective way to increase student engagement; i.e., use a combination of polls, discussions, exercises, break-outs, and lecture. But, some faculty caution against doing the same formula every class session, so mix up the order and types of activities across sessions.

Hosting a video meeting

Teaching through a video meeting requires a new set of skills in terms of managing what you display to students and in transitioning between material. You should practice with a TA or colleague before your first class. You can record the practice and watch it back to see what the student sees. It may take a few classes before you feel comfortable with the mechanics.

One helpful technique is to have a second computer or tablet set up near you. You are not able to see what the students see when you are sharing documents during the video meeting. Also, you may not be able to see chat if you are running a PowerPoint presentation. Thus, having an additional screen will allow you to see the student view of your presentation and features like chat or “raise hand.”

For a video on advice about lighting, positioning the camera, and improving the audio for your online delivery, see: canvas.upenn.edu/courses/1527073/assignments/8006649?module_item_id=18226006

Screen sharing

This most important function in the video meeting is using Share Screen to display any documents on your computer to the students on the video meeting. There are two options:
• **Share your whole screen:** This option will display whatever is on your desktop. The advantages are that you can quickly move between documents and you can show two documents at the same time; e.g., have PowerPoint on one half of the screen and Excel on the other. The disadvantages are that students can see any file on your desktop when all docs are minimized and will see other distractions like email previews that pop up.

• **Share a specific program:** This option allows you to share only a specific program you select (e.g., PowerPoint, Excel). The advantage is that students will only see that program. The disadvantages are that it is a bit slower to move between docs; you can only display one program at a time; and that if you accidentally bring up another program that is not being shared, the students will see a grey screen.

Sharing video or audio played on your computer is also possible through screen sharing. When you play a video during a session, you must check the “share computer audio” button for the students to hear your computer audio. Even so, keep in mind that the video playback may be low quality for students with bandwidth issues. One alternative is, if the video is on YouTube or Canvas, send a link through chat at the same time as you play it so students can stream it from their computer directly.

You may also want students, TAs, or guest speakers to share their screens at some point. You should make sure you identify the setting to do so in advance of the meeting (your meeting might be set up to disable others from screen sharing). You may also want to toggle the setting on and off to prevent unauthorized screen sharing. Finally, you should ask the participants to practice with others in advance so they are familiar with the interface.

**Breakout rooms**

**Breakout rooms** work well for small group activities, discussions, and exercises. They can be set up in advance, set up manually while teaching, or created randomly while teaching. Based on experience, here are some suggestions for using breakout rooms in your class:

• Pre-assigned breakout rooms only work well if you require students to attend their registered sections.

• Breakout rooms generally work better with small numbers of students, especially if the group is not the student’s usual learning team. Many faculty recommend limiting them to three to four students.

• Many faculty recommend keeping the breakout sessions short by using smaller exercises or prompts. The students will lose focus with long sessions, and long sessions will reduce your time to debrief.

• You should make instructions for breakout activities very clear. Once the students leave the main room for the breakout rooms, they can no longer see your slides with instructions. It helps to put instructions in writing (as opposed to verbal instructions that they may forget) and make them available on Canvas.

• You can broadcast messages to breakout rooms (e.g., to notify them on the time remaining for the breakout) and you can drop into the breakout sessions to check on the students.

For a video on how to use breakout rooms, see: canvas.upenn.edu/courses/1527073/assignments/8006658?module_item_id=18226024

**Free-form writing during video meetings**

There are native features in the video meetings that allow you to free-form annotate or write on the displayed material.

• The **Whiteboard** feature brings up a virtual whiteboard on which you can write student points or draw out an example similar to writing on a physical whiteboard. But, writing is not easy to do if you have to use a mouse or trackpad; practice before class to make sure you are happy with the functionality. A big drawback is that another participant may be able to activate a whiteboard and erase what you are doing.

• The **Annotation** feature allows annotations on the screen; e.g., draw on your slides for emphasis. Again, the
writing is not easy with a mouse or trackpad.

A major limitation is that you cannot easily save the whiteboard or annotations for later; you would need to take a screen shot.

Most faculty use external apps like Notability or GoodNotes to annotate during sessions and to save the end product for students to download later. These products work well with a tablet. For a video on using annotation apps on a tablet, see: canvas.upenn.edu/courses/1527073/assignments/8006784?module_item_id=18226358

TA participation

Teaching during a video meeting requires a different set of skills for juggling inputs (e.g. slides, student questions, tech glitches) than in-person teaching. Many faculty find it helpful to have a TA on their video meetings. The TA can moderate chat and look for raised hands (either actual or virtual). They can also manage chat with students related to technical issues. Some instructors suggest having the TA run the PowerPoint slide show from their computer so the instructor can focus on other aspects of the video meeting (although, other instructors found this difficult to pull off smoothly). The TA can also step in and talk to students if you have connectivity issues and have to drop off for a couple of minutes.

Guest speakers

Guest speakers may be easier to find for an online class given the lower cost of joining a video meeting. However, guest speakers may have their own connectivity issues that impact their talks.

- One recommendation is to have the speaker record part of their talk in advance, and then do live Q&A after you show the video.
- Another recommendation is for the faculty to interview the speaker on a recorded video meeting and play excerpts prior to live Q&A.

If you want to open your guest speaker session to a wider audience, please contact Wharton Computing. You may need to use a different version of the video conferencing software if the number of participants is large.

Even if a guest speaker cannot join live, some faculty find that the students appreciate pre-recorded videos of experts that the faculty played during the video meeting.

Office hours and out-of-class interactions

All office hours should be available in a virtual setting. Student access to buildings may be too limited to allow in-person office hours, and many students will be remote. You should decide whether to have a set time for virtual office hours or do them by appointment (or both).

- The advantage of a set time for virtual office hours is that it allows many students to participate and to stay in the room to listen to other students’ questions, providing some economies of scale in helping students. Alternatively, some faculty used the "waiting room" feature of Zoom to replicate the normal sequential office hours in a virtual format; clearly let students know if you adopt that approach.
- The advantage of scheduled appointments is that students outside of our time zone are better able to access faculty members; these interactions are often their only synchronous interactions with faculty.

In a virtual class, students are missing out on informal interactions with you before and after class, as well as stop-and-chats when you see each other on campus. Students greatly appreciate it when faculty sign on to the video meeting early, or stay on after it is over, to have these types of informal discussions. You could also consider
occasional “virtual lunches” to replace our student-faculty lunch program.

Make sure to answer student emails on a timely basis. To centralize some of the Q&A, some faculty use alternative channels like Canvas discussion boards, Slack, and Piazza. For a video on how to use discussion boards, see: canvas.upenn.edu/courses/1527073/assignments/8012929?module_item_id=18247159

Developing Graded Assignments

Exams

The university is strongly discouraging proctored-exam options (provost.upenn.edu/covid-19-faqs-instructors#remoteproctoring). You should plan on giving online open-book exams without proctoring. You should also reinforce the Honor Code in your syllabus and in your exam document. Also make the academic consequences of cheating clear in your syllabus.

In the online environment, many faculty have switched to automatically graded exams in Canvas (e.g., multiple choice, multiple answer, true-false). These exams can be implemented in the following ways to reduce the potential for cheating:

- Question banks allow you to write multiple versions of the same question with small differences, with each student’s quiz getting a random draw from the question bank.
- You can also randomize the order of the answers.
- You can specify a time-period during which all students have to take the exam; although, you may need to offer a second time period for remote students in distant time zones.
- Alternatively, you can specify a window during which all students have a fixed-amount of time to finish the exam once they start it.

Canvas also supports short-answer or essay type questions that can be manually graded.

- Some professors use multiple exam slots to accommodate remote students and write slightly different exams for each slot.
- If you want students to handwrite their answers, you can have them use an app like CamScanner to create a pdf and upload into Canvas.
- Keep in mind that students may not have the ability to print exams at remote locations.

Setting up exams in an online format may take a significant amount of time when you first do them, especially if you use questions banks. Start working on exams earlier than usual!

Student Disability Services will work behind the scenes with the Courseware team to change exam settings for students with extra-time accommodations.

For a video with advice on online exams, see: canvas.upenn.edu/courses/1527073/assignments/8006660?module_item_id=18226027

To learn more about implementing exams in Canvas, see support.wharton.upenn.edu/help/canvas-remote-instruction-exams-for-remote-instruction-faculty.

Short quizzes
To focus student participation and to provide more opportunities to assess student performance, you can use short pre-class or post-class quizzes on Canvas.

A pre-class quiz allows the student to assess whether they have sufficiently grasped the material in the pre-class prep. Knowing they will be quizzed on the pre-class material provides a motivation to do it. As the instructor, you get feedback on what students did or did not understand prior to class.

A short post-class quiz allows the students to check their understanding of the course material right after class. They also provide remote students who are unable to attend video meetings with an opportunity to demonstrate they watched the recordings of the sessions, and get grading credit that they cannot get through in-class participation.

Class participation

The important factors to consider when deciding how to grade class participation are that:

1. Some students will have difficulty attending synchronous sessions due to time-zone differences or due to illness.
2. Open class discussions are less fluid and take more time in an online format.

You can provide credit for asynchronous participation through Canvas discussion board postings, alternative app postings (e.g. Slack, Piazza), or Canvas quizzes. Some faculty ask the students who could not attend the video meeting to watch the recording and send a list of comments or questions they have based on the discussion (giving more points to students that do not just provide feedback on the first three minutes of the session!). Note that some instructors are concerned that asynchronous participation reduces attendance at synchronous sessions and some students feel like discussion board postings are just “busy work.” So, the best approach here is not clear, and must be thoughtfully set up with a consideration of the trade-offs.

Student comments during class will be easier to grade because you (or a TA) can watch back the recording to give points for the comments. However, you will likely get fewer student comments than in an in-person session. Strategies for managing student participation are in the Student participation during video meetings section above.

You can also give points for chat comments and questions. Make sure to download the chat transcripts from the video meeting (BlueJeans | Zoom) before logging off or you will lose them!

Through PollEverywhere, you can create a “group” for your students by uploading their emails from your class list. As long as they are signed in when they answer your poll questions, you can download a record of all of their poll participation. You can also easily give polling credit by using Canvas quizzes during class.

Group projects

Group projects are still feasible in online class, but require some extra consideration. Students will likely not be able to meet in person, but will certainly be comfortable with video meetings. You may want to have students form their own groups or to shuffle the groups to avoid have time-zone conflicts within the groups. You may need to provide students information on where their classmates are located to facilitate group formation. You also need to be mindful that student illnesses or family emergencies may have a bigger impact than usual on a groups’ ability to meet deadlines.

You can have students present their projects during video meetings by enabling the Share Screen function for them. But, you have to make accommodations for groups that cannot attend the synchronous session.
Some faculty ask students to record their presentations in advance to improve the quality and to monitor the length. You could play these recordings in class, followed by a live Q&A. Or, you could ask the students to watch in advance and come to class ready to ask questions and provide feedback.

Choosing and Working With Technology

There are a lot of options when it comes to the technology available for helping you teach online. Wharton Computing has a section of their Knowledge Base devoted to learning and teaching remotely. This list of resources should help you figure out what will work for you. You can also reach out to your Wharton Computing team for help and guidance.

Wharton Computing created this chart showing ways you can think about transforming your in-person teaching plans to an online version.

Equipment and Teaching Setup

Whether you are teaching from home or from a classroom, you’ll need to make sure well in advance that you have what you need.

- Remote Teaching Checklist

Video Conference Platform

Wharton Faculty have access to both BlueJeans and Zoom for hosting online classes and meetings. These resources will help you pick which one to use, as well as information on key features of each platform.

- Video Conferences (BlueJeans or Zoom)
- Video Conference Features
- Articles on Holding Virtual Events
- Inviting a Guest Speaker to a Video Conference

Working with Video Meetings

- Managing Online Presentations
- Managing Online Exams.
- Canvas’ New Quizzes
- Recording Online Meetings