



# WVU TECH REMOTE CLASS DELIVERY TECHNOLOGY GUIDE

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## Purpose

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The purpose of this document is to assist WVU Tech Faculty in successfully delivering their classes to both in-seat and remote students under the constraints placed on the university by the COVID-19 pandemic. This aims to cover the big picture and help faculty decide on teaching methods and tools that will work with their teaching styles.

## Teaching and Learning Commons Resources

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The Teaching and Learning Commons (TLC) in Morgantown has compiled an incredible wealth of useful information, guides, webinars, and more for instructors online at [tlcommons.wvu.edu](http://tlcommons.wvu.edu). WVU Tech ITS encourages all faculty to browse this website to prepare for course delivery.

To avoid creating redundant information, this guide does not cover:

- How to use Zoom
- How to use Google Drive
- How to use eCampus
- How to post a video to YouTube
- How to share lectures with students electronically
- How to use software to record a lecture

The TLC has compiled great, detailed guides on all those subjects and more on the

### [TLC Instructional Continuity and Tools Page](#)

WVU Tech ITS highly recommends you visit the hyperlink above for useful information on delivering your course.

# Teaching Methods in the Classroom

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Below is a table of various teaching methods WVU Tech ITS has identified as methods faculty used in the past when delivering their classes to in-seat students. In the next section, this guide will provide recommended solutions for implementing these teaching methods for in-seat and remote students.

Teaching Method	Description
Simple Whiteboard	You write things on the whiteboard while talking to the class. What you write is NOT COMPLEX like math problems with small symbols.
Complex Whiteboard	You write things on the whiteboard while talking to the class. What you write is COMPLEX like math problems with small symbols.
Projector	You use a PowerPoint presentation to deliver your lecture or: You use software in front of your students to demonstrate its use.
Handouts	You provide your students with paper or electronic handouts containing notes and other materials that supplement your class delivery.
Pure Lecture	You talk to your class for long periods without writing anything.
Viewing and Discussion	You have the class view a video or other form of media and then have discussion.
Hands-on Demonstration	You use items to physically demonstrate things to your class.

## Augment Teaching Methods for Online Students

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As faculty, you likely use one or many of the teaching methods listed in the previous section when delivering your classes. Below is a table of solutions recommended by WVU Tech ITS to augment each teaching method to accommodate remote students. You may find that other solutions work well for you and you are encouraged to use what works best for you. The following have been determined by WVU Tech ITS to be the easiest, simplest, and have the greatest chance of success for anyone.

# Augment Teaching Methods for Online Students cont.

Teaching Method(s)	Recommended Solution
Simple Whiteboard	<p>Use a free diagramming software like <a href="https://draw.io">draw.io</a> in place of writing simple things on the whiteboard.</p> <p>Connect your computer to the projector for in-seat students and share your screen via Zoom for remote students. Supplement with narration and video feed of your person as necessary.</p>
Simple Whiteboard and or Complex Whiteboard	<p>Use a document camera for video feed of yourself writing on a piece of 8.5x11 paper instead of the whiteboard.</p> <p>Connect your computer to the projector for in-seat students and share your screen via Zoom for remote students. Supplement with narration and video feed of your person as necessary.</p>
Simple Whiteboard and or Complex Whiteboard	<p>Use a touchscreen laptop or tablet along with free whiteboard software like <a href="https://openboard.com">Openboard</a> for video feed of yourself writing on the laptop or tablet instead of the whiteboard.</p> <p>Connect your computer to the projector for in-seat students and share your screen via Zoom for remote students. Supplement with narration and video feed of your person as necessary.</p>
Simple Whiteboard and or Complex Whiteboard	<p>Use a digitizer if your device does not have a touchscreen for video feed of yourself writing in a free whiteboard software like <a href="https://openboard.com">Openboard</a> instead of the whiteboard.</p> <p>Connect your computer to the projector for in-seat students and share your screen via Zoom for remote students. Supplement with narration and video feed of your person as necessary.</p>
Projector	<p>When using a PowerPoint Presentation, screenshare the PowerPoint window via Zoom for remote students instead of trying to film it with a webcam. Supplement with narration and video feed of your person as necessary.</p>
Projector	<p>When demonstrating software on the computer to in-seat students, screenshare the software via Zoom for remote students. Supplement with narration and video feed of your person as necessary.</p>

# Augment Teaching Methods for Online Students cont.

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Teaching Method(s)	Recommended Solution
Lecturing and or Hands-on Demonstration	Use a webcam and microphone to capture yourself lecturing or performing your hands-on demonstration and share it with remote students via Zoom.
Viewing and Discussion	Use the screensharing and audio-sharing feature of Zoom to share your device's screen and audio to remote students while viewing media before a discussion.
Viewing and Discussion	Distribute media to students before class and have them view it before class so only the discussion must take place during class.
Handouts	Make your handouts available electronically for remote and in-seat students alike. Visit <a href="https://commons.wvu.edu">tcommons.wvu.edu</a> for more information.

## Best Practices for Video Quality and Recording

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### Record All Lectures

WVU Tech ITS strongly encourages all faculty to record their lectures and make them available online for remote students. With the uncertainty imposed by the COVID-19 pandemic, students may have to go into quarantine or may become so sick that they cannot attend classes. Moreover, students may not have access to a reliable internet connection at home or may be experiencing a power outage. Recording all lectures and making them available online will help avoid headache when students cannot attend lectures.

### Do Not Record Whiteboards with Webcams if Possible

It is inadvisable to use webcams to record or stream yourself writing on a whiteboard. Factors like glare on the whiteboard, and video compression can make it very difficult for remote students to read what is on the whiteboard.

WVU Tech ITS strongly recommends that you try one of the solutions from the previous section instead. If you have no other option than recording a whiteboard, make sure to use a dark, bold marker and write in very large font.

### Do Not Record Projector Screens with Webcams

Anything on the screen of your computer can be shared using the screenshare option on Zoom. Screensharing with remote students instead of trying to record the projector screen with a webcam will yield much better results.

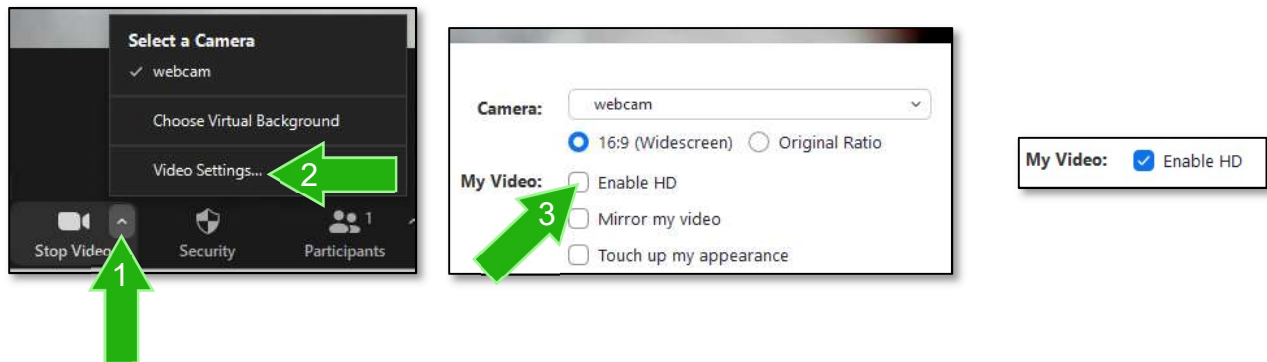
# Best Practices for Video Quality and Recording cont.

## Use the “Enable HD” Option in Zoom

Zoom will often use a lower quality version of your camera’s feed to save on network bandwidth. Follow the guide below to force Zoom to use a better-quality video feed.

From your Zoom Window:

1. In the bottom left corner, click the caret next to “Stop Video.”
2. Click “Video Settings.”
3. Find the box labeled “Enable HD” and make sure it is filled in blue with a white check.



## Project Your Voice Towards the Microphone

For many faculty, it is common to face the whiteboard and write while talking. When you talk towards the board, the microphone will have a harder time picking up your voice and remote students will have a harder time hearing you.

Instead, make sure that, when you talk, you are projecting towards the microphone. Try not to write and talk at the same time. Instead, write some and then turn to face the microphone and explain what you wrote.

## Repeat All Questions Before You Answer

When a question is asked by a remote student or an in-seat student, there is a good chance that it was not picked up on the microphone well enough to be audible in the recording. Get into the habit of repeating any questions asked by students before answering regardless of how audible it was to you. This will greatly benefit any students who must watch a recorded version of your lecture.

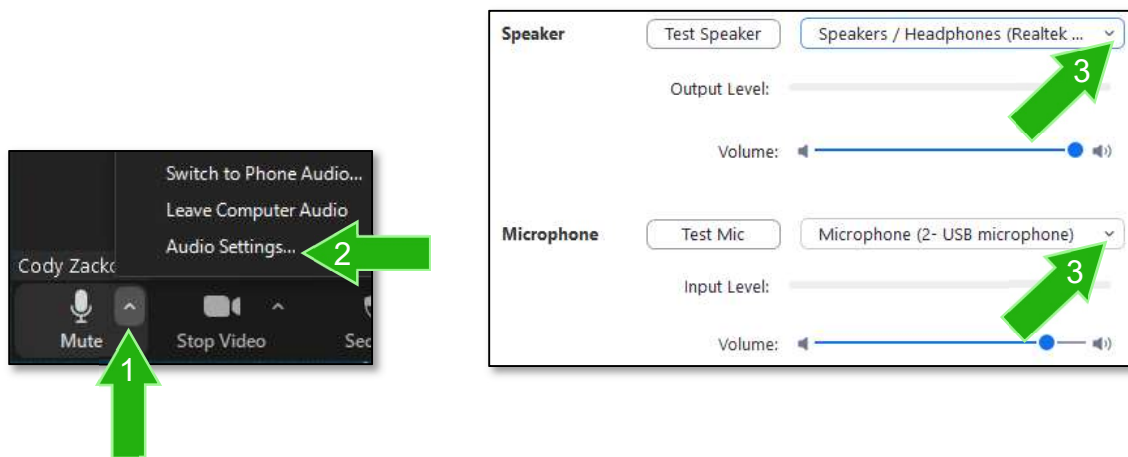
# Best Practices for Video Quality and Recording cont.

## Make Sure the Correct Audio Devices Are Selected in Zoom

If you have more than one speaker or microphone device connected to your computer, it is not uncommon for Zoom to select the wrong one. If you do not have the right speaker device selected, you may not hear the other end of the Zoom call. If you do not have the right microphone device selected, the other end of the Zoom call may not hear you. Follow the guide below to change the speaker and microphone device in Zoom.

From your Zoom Window:

1. In the bottom left corner, click the caret next to “Mute.”
2. Click “Audio Settings.”
3. Use the dropdown boxes to select the correct device.



## Select your Laptop's Mic Instead of your Webcam's Mic

In most circumstances, you will have your laptop within arm's reach while instructing and the webcam will be farther away. This means your laptop's internal microphone will often pick up your voice better than the further-away webcam's microphone can. Be sure to select the microphone device that is closest to where you will be talking for best results when capturing your voice.

# Remote Class Delivery Devices

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This section contains reference information on the various devices referred to in this guide.

## Webcams

Webcams are cameras designed to capture video feed on laptops and desktops. Modern laptops will have a webcam built into the top screen bezel. Standalone webcam units are sold for desktop computers that typically sit on your monitor. The standalone webcam units usually come with a built-in microphone as well.

### Uses

- Capturing Video
- Capturing Audio (only on units that have built-in microphones)

### Class Delivery Value Added

- Students can see your person as you deliver the class
- Hands-on demonstrations can be captured
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### Drawbacks

- Webcams often cannot pick up writing on whiteboards well enough that it is legible to remote students.
- Webcams often cannot pick up anything being projected onto the screen well enough that it is legible to remote students.
- The sound quality given by webcams with built-in microphones may be insufficient for your needs.

## Document Cameras

Document cameras are highly specialized webcams designed to show video feed of an 8.5 x 11 piece of paper. Their exact features vary from model to model with some having built-in microphones as well. They can be used to deliver a lecture to an in-seat and remote students simultaneously .

### Uses

- Capturing Video of a piece of paper
- Capturing Audio (only on units that have built-in microphones)

### Class Delivery Value Added

- Both remote and in-seat students can watch you work out problems while narrating them

### Drawbacks

- Document cameras require you to sit and write on a piece of paper instead of writing on the whiteboard. This may not be a comfortable teaching style for you.
- It can be tricky to keep the paper in-frame when using a document camera.



# Remote Class Delivery Devices cont.

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## Microphones (Mics)

Microphones are used to capture audio. Most modern laptops will come with a microphone built in. Standalone microphone units are sold for desktop computers that come in a variety of formfactors. Most modern webcams also come with built-in microphones.

### Uses

- Capturing Audio

### Class Delivery Value Added

- Students can hear your voice as you deliver your class.
- You can interact with remote students who also have microphones.

### Drawbacks

- Some laptops' built-in microphones pick up lots of background noise and have poor sound quality.
- You may need to stand close to a microphone for your voice to be audible to remote students.

## Tablets and Touchscreen Laptops

All tablets and some modern laptops come with touchscreens. Touchscreens are ideal because, when paired with special software, allow you write as if you were writing on a whiteboard while sharing your screen with remote and in-seat students. Results are often much better and more legible than using a conventional webcam to capture writing on a real whiteboard.

### Uses

- Capture and narrate handwriting

### Class Delivery Value Added

- Both remote and in-seat students can watch you work out problems while narrating them

### Drawbacks

- With some touchscreen laptops, writing on the touchscreen causes audible tapping and popping noises in the microphone.

# Remote Class Delivery Tools cont.

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## **Digitizers (Graphic Tablets)**

If you have ever signed for a purchase using a plastic pen on an electronic screen you have used a digitizer. Also called graphic tablets, these devices allow users to move the cursor around with a plastic pen and screenless tablet. Many digital artists use these since it gives a traditional pencil-and-paper feel. They are also ideal for writing and solving problems on a computer while screensharing with remote students.

### **Uses**

- Capture handwriting

### **Class Delivery Value Added**

- Both remote and in-seat students can watch you work out problems

### **Drawbacks**

- Digitizers require practice and hand-eye coordination to use efficiently
- Digitizers do not provide video or audio recording capabilities