

# [HOW-TO] How to set up your online conferencing presentation

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## Composition and framing

Your camera should be at the subject's (i.e., moderator/speaker/presenter) eye level or slightly above (max. 3-5 cm). Use a tripod, books, or other means to achieve the proper height. Vertically, the eyes should be at  $\frac{1}{3}$  from the top of the frame (image 1 below), not in the middle. Horizontally, you can move the web camera slightly to the left or right. The subject can also sit at  $\frac{1}{3}$  of the frame (image 2 below). Positioning the subject as in image 2, or with a bit wider frame, is also a good illustration of how to frame the subject. Here, the eyes are at  $\frac{1}{3}$  of the frame height, the shoulders are visible (max. 15-20 cm), and the distance between the top of the head and the border of the frame is short. Image 3 below illustrates a well-centred camera position, height, and background.



Image 1

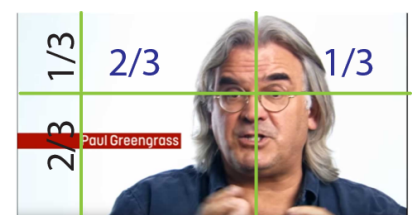


Image 2

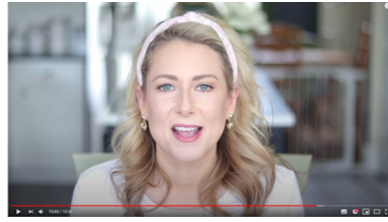


Image 3

## TIPS

- Clothes with vertical and horizontal lines, and small patterns can create strange-looking wavy patterns which should be avoided.
- The rule of thumb is to avoid wearing clothes which are the same colour as your wall/background or skin tone.
- Always try to look at the camera when speaking, and not at the screen, i.e. the audience present at the online event.

*Composition and framing explained:*

<https://confluence.cc.lehigh.edu/display/LKB/Composition+and+Framing+-+Video+Basics>

## Background

Use as few distracting elements as possible. A clutter-free background is ideal. You don't necessarily need a clean background, but it is important that the background does not steal attention from the main subject.

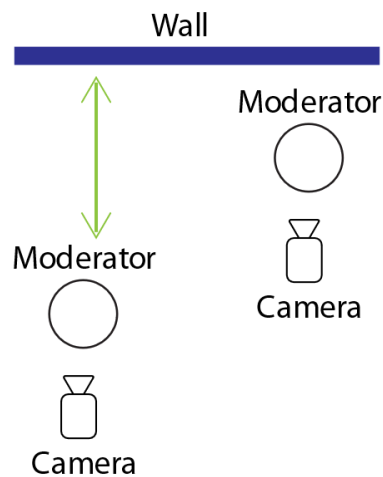


Figure 1

As shown in the above figure 1, bigger distances between the subject and the background will make the background less distinct, and will keep the focus on the subject and can be useful when the background is untidy or cluttered.

The image 4 below illustrates how the distance between the subject and the background, in addition to a fast aperture lens, can separate the subject from the background.



Image 4

### Green screen as a background

Using the green screen in video conferences replaces the background of a video with a digital or virtual background. It offers the most natural-looking way to integrate the subject into the video.

Green screen explained: <https://www.techsmith.com/blog/how-to-create-a-diy-green-scre/>

### Lighting

Daylight is the best source of light. If the sunlight is too strong, pull a curtain over the window to diffuse and soften the light. If it is cloudy, the sunlight is already diffused, and you will not need a curtain. The goal is to have the subject properly lighted and exposed. Since the majority of people work with fully automatic web cameras (where light is measured for the entire scene, and the camera sees the average value as the proper exposure rate), you should avoid strong backlights.

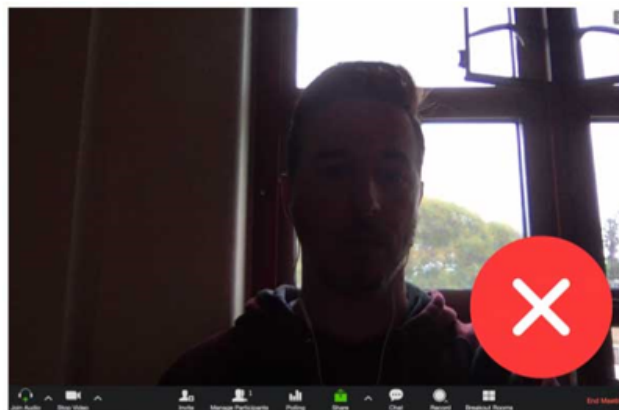


Image 5

Image 5 above shows the wrong use of light. Here, the subject should rotate himself and the camera by 180 degrees to face the window. The light coming from the side would also be a good solution, especially if the light is strong and a lot of light is reflected off the wall.

If you are using artificial light, it is important to avoid light that is directly above the head of the subject, as well as strong direct light. On the other hand, soft diffused light is a good option. The

lighting source can be a lamp with a white daylight bulb. To soften the light, you can cover the lamp.

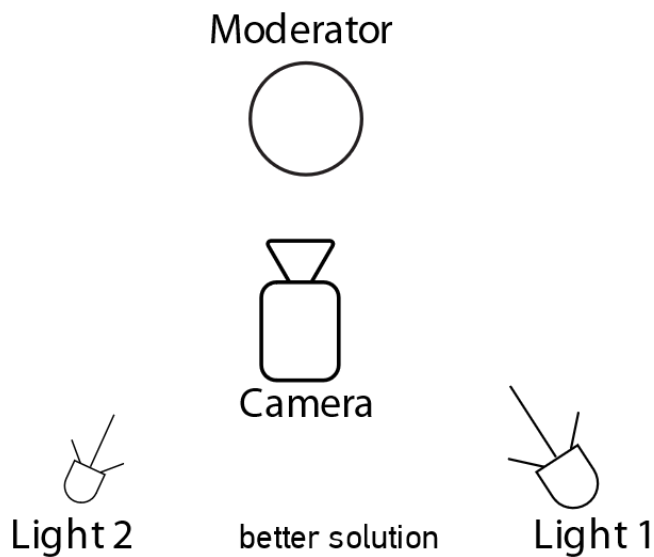


Figure 2: Two lamps, one is stronger than the other to add a bit of volume



Figure 3: Camera is in front of the lamp

## TIPS

- Tracing paper is a great solution for diffusing lamplight.
- Use a clothespin to attach the tracing paper to the lamp.
- You can achieve different light intensities with different bulb wattages, or by using more tracing paper over the lamp.
- Be aware that the camera can create a shadow on the subject in this setup.
- Caution: Never leave any objects on lamps when you're not in the room.

Lighting explained: <https://confluence.cc.lehigh.edu/display/LKB/Lighting+-+Video+Basics>

## Sound and microphones

The best sound is obtained when the microphone is as close to the subject as possible. Three types of microphones may be used: The built in-camera microphone, a shotgun microphone which uses shaped electronics to bring you closer to the subject, or a clip-on lavalier microphone which is attached around the subject's neck close to their mouth. External microphones always work better than built-in camera microphones.

Sound and microphones explained:

<https://confluence.cc.lehigh.edu/display/LKB/Sound+and+Microphones+-+Video+Basics>

## Advanced camera settings for a studio environment

It is best to avoid the camera's automatic mode and set up all the parameters manually. Set the camera movie mode to *manual*. Below are important parameters we need to set manually.

**Frame per second (FPS):** Set the camera to 25 FPS. You only need to do this once.

**ISO speed:** ISO speed is the camera sensor's sensitivity to light. The higher the ISO speed, the more light-sensitive it is. Higher ISO means more noise and less dynamic range, so lower ISO is our goal. An ISO between 100 and 400 usually works well on most cameras.

*ISO explained:* [https://www.youtube.com/watch?v=q8cj9Lj9w-g&ab\\_channel=Apalapse](https://www.youtube.com/watch?v=q8cj9Lj9w-g&ab_channel=Apalapse)

**White balance** is the colour temperature of the light (see figure 4 below). White balance can be set through presets. On many cameras, it can be set manually by setting the colour temperature in Kelvins and by using a referential image based on which the camera will determine the white balance. It is better and easier to use the Kelvin degree setting, but it is not available on all cameras.

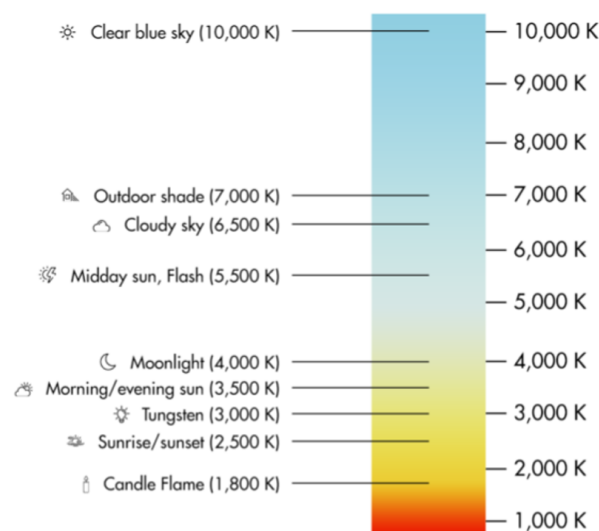


Figure 4

*Setting white balance explained:* [https://www.youtube.com/watch?v=Fr\\_4l4hUOfs](https://www.youtube.com/watch?v=Fr_4l4hUOfs)

**Shutter speed** refers to the duration of the camera shutter being open. Since you are using 25 FPS, doubling that number works best, i.e., the shutter speed of your camera should be 50. These settings will create the most natural feel and flow of movement. Still, there are many situations where 50 cannot be achieved.

*Shutter speed explained:* <https://www.youtube.com/watch?v=7R9ZTxoTOSk>

**Aperture value** is the opening in the lens through which the light passes to enter the camera. It controls the speed of the shutter and the depth of field (DOF). The value is expressed in an F-Number. The image below explains aperture in more detail.

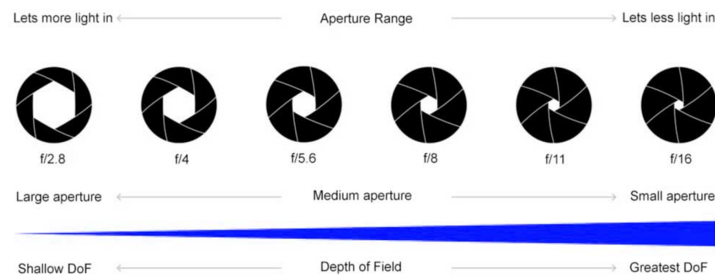


Figure 5

Aperture explained: <https://www.youtube.com/watch?v=YojL7UQTVhc>

**Metering modes** help you determine the appropriate exposure. While having metering set to SPOT, navigate with the camera focus wheel to the main subject's face, press the shutter halfway, and see the results. The aimed result is shown in the below figure 6.



Figure 6

We need to set the zero value. Metering modes are, in addition to a visual check, a way to determine the right exposure.

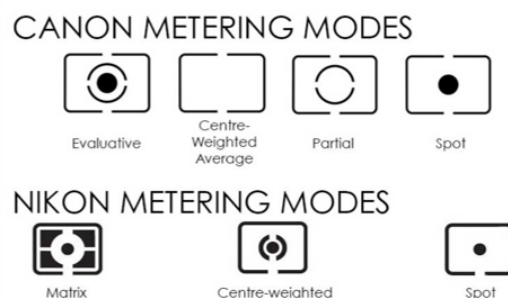


Figure 7

Metering mode explained: [https://www.youtube.com/watch?v=z0yeyHAEXp0&ab\\_channel=SauravSinha](https://www.youtube.com/watch?v=z0yeyHAEXp0&ab_channel=SauravSinha)

## Camera setup



Image 6

Every set up needs a lot of tweaking, testing, and adapting to the filming environment. Below are some basic schemes of how to achieve something similar to image 6 above. Use a couple of roll-ups to improvise a studio. You can put curtains over the roll-ups, or some print sheets.

When using print sheets, avoid white and bright colours, as well as prints with a shiny finish. Misted prints can be used. Using additional items like lamps, plants, or shelves are also welcome. It is important that the 'walls', ambient, and lights behind the subject and the TV screen are similar. Otherwise, the appearing image can confuse and distract the viewers when switching camera views.

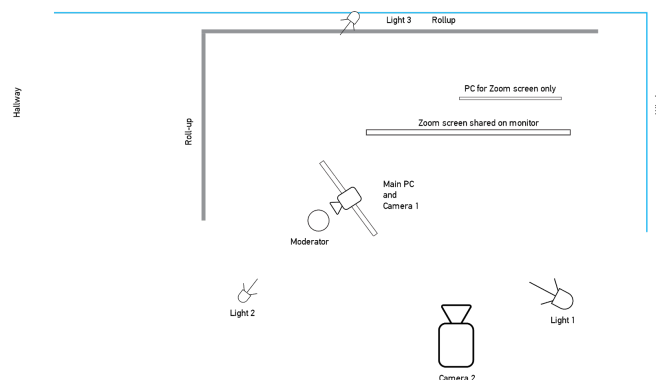


Figure 8

The above set up uses two cameras (see figure 8). Camera 1 is on the monitor of the main PC and points at the host. The TV screen displays a shared screen from the speaker's laptop. Camera 2 is filming the wider image (as we can see from the image above). While Camera 2 is on, the subject would be looking at the TV screen and would have his laptop open, which can potentially block the view of the TV screen, so consider moving the laptop out of the frame of

Camera 2. The lighting set up is good, and the roll-ups will be a limiting factor for the light set up. TV screen settings for light intensity can help a lot here.

### **How to set up an additional camera**

**ISO speed:** For starters, set to the lowest value (e.g., 100). You can change it later if needed.

**White balance:** As there can be different sources of light during the shoot, it can be tricky to find the right white balance. The best way to find the optimal white balance is to manually set the value in Kelvin degrees. This will vary depending on the outdoor light. A visual check of the camera screen will determine the appropriate white balance setting.

**Shutter speed:** 50 would be best, but in a situation where you have a TV screen in the scene, you should lower the shutter speed to 40, or even 30. With the wrong shutter speed, only half of the picture will be visible on the TV screen, so it is best to try a shutter speed setting of 50, 40, 30, and check which one looks best.

**Aperture value (F-number):** When you need to have the main subject and the TV set (the first and second plain) in focus, you should change the F-number from 11 to 16. When you find the right shutter speed, and an F-number that gives good results, you can come back to set a higher ISO value if needed.

**Frame per second (FPS):** Set to 25.

### **TIPS**

- External microphones always work better than built-in camera mics.
- One issue with DSLR and mirrorless cameras is sensor overheating, i.e., limited recording time. Manufacturers do not provide complete documentation on this.
- Additional power supply for the camera during live streaming: Some cameras work with a camera grip and some cameras can be plugged in an AC unit.
- Recommended equipment:
  - One Godox LED 1000W White Light two Godox LED 500W White, and three studio light tripods
  - Camera tripod

### **Green screen**

Using green screen in video conferences replaces the background of a video with a digital or virtual background. It offers the most natural-looking way to integrate your subject into your video. Figure 9 below shows a few tips for the effective use of green screen.



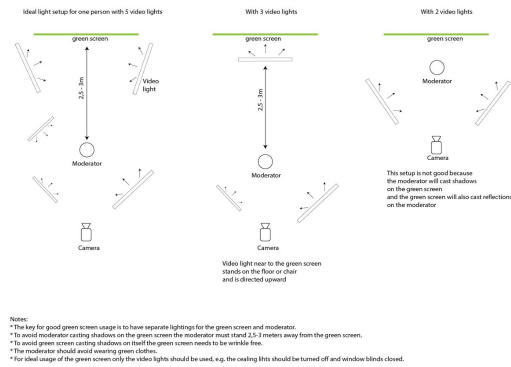


Figure 9

Green screen explained: <https://www.techsmith.com/blog/how-to-create-a-diy-green-scre/>

## Recording video presentations

Pre-recorded video messages or presentations are one of the ways that can add value to your online events and they come in handy when you are not able to attend an online event in realtime. Video files can be presented to your audience by playing them on your computer while sharing your screen on a video conferencing platform, or it can be transferred to an online event organiser.

### TIPS

- Always try to look at the camera when recording, and not at the screen.
- Make a test recording first and check the sound level and quality. If needed, speak louder during the recording.
- Make sure there is enough light in the room where you are making the recording (daylight is ideal). See the *Lighting* section of this document.
- Sit or stand against a plain background which will provide sufficient contrast (see the *Composition and Framing tips* section).
- Composition: See Figure 10 below.

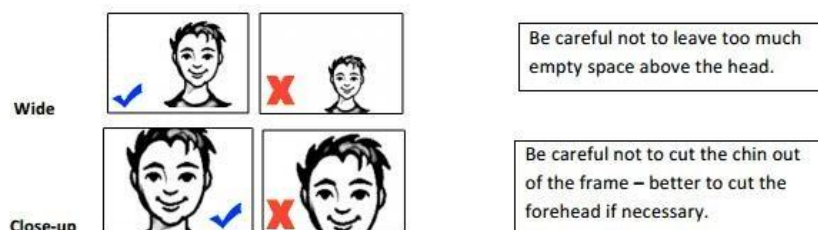


Figure 10

Recording using a webcam, digital camera, or mobile phone

Notebook computers equipped with webcams usually have pre-installed software for recording with the webcam. If you haven't used this software yet, try finding it and do a test recording following on-screen instructions. (If you are using a desktop computer you will need a webcam connected to your computer.) If you are using a Mac computer, the 'PhotoBooth' application will allow you to record your video from the built-in camera. In most cases, the default settings for your webcam or mobile phone will produce a suitable video file for use on the web.

- Use 'Medium' or 'High' quality for the recording defaults.  
Note: If you are using a digital or video camera you may need to reduce the resolution and thus the size of the resulting video file. Try to change the resolution to VGA (720x480 pixels) setting. Ideally, you should use video resolutions: 1280x720 or 1920x1080.
- Set the speed on your camera to 25 frames per second (25fps).
- If you are using your mobile phone or tablet, hold the device horizontally rather than vertically to record your message (see image 7 below).



Image 7

- Save your video file as MP4 format.
- A file containing a short video message (2-3 minutes) should not exceed 300 MB. If your file is larger than that you may need to reduce the resolution/video quality or frame rate setting on your camera.

#### Video file transfer

Once you complete your recording you will have a video file on your computer that is much too large to send as an e-mail attachment. The easiest way to send a large video file is through a file-sharing website.

One of the easiest to use is WeTransfer (<https://www.wetransfer.com/>). There is no need to register or create a user account on the site. Please select free use of WeTransfer at the prompt screen.

- Open the WeTransfer website (<https://www.wetransfer.com/>), click on 'Add files' and choose the video file from your computer (top arrow in the image 8 below).
- In the field below, enter the e-mail address for the person to whom you wish to send the video (second arrow in the image below).
- In the third field, enter your e-mail address (third arrow below).

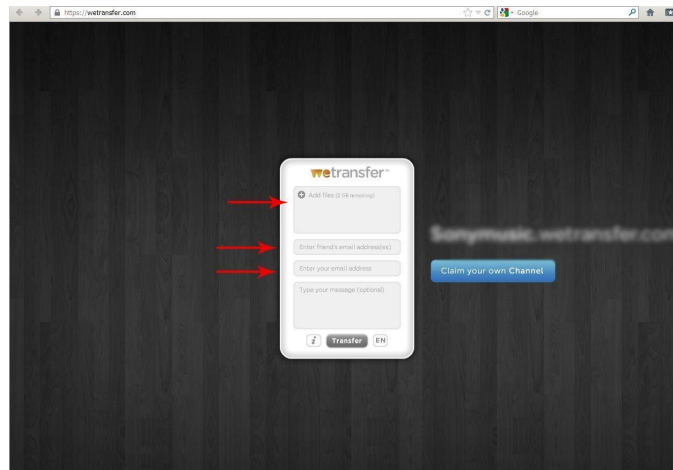


Image 8

- Now click on 'Transfer.' Depending on your Internet connection speed, the upload can take from 30 minutes to several hours. You can monitor your remaining time for upload.
- When the upload is finished, you will see a confirmation that the transfer is complete and you will also receive a confirmation e-mail.
- You can use any other web service you are familiar with to send your video file. Some of the other services that you can use are: GoogleDrive, Pc Transfer or other file transfer or cloud service.
- Once the upload is finished, **share the link for downloading the file with the recipient via email.**

### The [ConfTech Lab's](#) studio setup: Equipment and budget



Image 9: Geneva ConfTech Lab studio

Material	Cables used	Remote	Cost (euro)
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MEETING ROOM			
2 Samsung screen 98"	Power RJ45 HDMI	2	18057,80
2 electric TV stand	Power		1841,80
1 Samsung Flip 65"	Power	1	2698,80
1 electric TV stand 2 position : vertical or table	Power		1892,90
1 samsung TV 55"		1	522,00
1 manual TV stand			137
1 Meetup Logitech camera	Power USB	1	1069,90
1 Lumens PTZ camera VCP30U	Power USB	1	1037,00
1 computer	Power		3359,00
1 wireless mouse + cables			118,00
1 wireless keyboard with touchpad			49,90
STUDIO VIDEO			
2 Godrox light 1000W		2	421,00
1 Godrox light 500w		1	170,00
1 kit panoramic background in green fabric on aluminium structure in 3 folding parts length 4m height 2m			519,86
2 Green fabric background 1.5 m x 2.1 m			81,24
SOUND			
1 Saramonic Blink500 B4 is a compact, two-person wireless microphone system			327,00

1 Samson Go Mic Mobile			287,00
1 Samson XPD2			121,00
<b>OTHER</b>			
1 Iphone 11max pro			1229,00
1 Stabilizer Osmo mobile 3			145,00
2 Tripods			300,00
1 Panasonic Full HD camera			400,00
1 Canon EO5 700D camera			450,00
1 drone			498,95