Making your Videos as Accessible as Possible

Some of your students might not have excellent internet, making the virtual components of taking classes a challenge. We've pulled together some general recommendations you can share with students around how to reduce the stress on their internet connection, and we've also created this guide on how to use Handbrake (a free software you can download online) to compress your instructional videos, making them easier to load for students with slower internet connections.

For Students: Reducing Stress on your Internet Connection

1. **The user's choice of device makes a difference.** Laptops or desktop computers are the number one choice for the online environment. IPads, tablets and mobile phones limit both full engagement and connectivity. Mobile phones have proven to be better with connectivity (using data instead of WiFi), but greatly limit engagement options by reducing the availability of platform ad-ons such as whiteboard, screen sharing and chat box use.

2. **Headphones and ear buds** for live conferencing greatly improve large class management by reducing background noise and feedback. Some faculty might even choose to make headphones during live sessions a requirement for their students.

3. **Connectivity Basics:**

   a. Hardwired to the internet through an ethernet cable is best. Upload and download speeds are both improved as well.

   b. If using WiFi - try to be as close to the router as possible. Being only as distant as another room decreases connectivity

   c. If using WiFi – disconnect as many other devices in the home as possible. It does make a difference.

   d. If using WiFi – avoid streaming while accessing course materials (ask family/roommates to refrain from Netflix, YouTube, etc. while in live sessions)

4. **Anecdotal Evidence** - If students are experiencing connectivity issues during online sessions (i.e. audio/video syncing issues, loss of audio or video) – try or suggest these actions:

   a. Turn off video camera for a few moments (or longer if necessary)

b. Instructor and learner can both reduce the screen size of the online "room" on their desktop (only an option on a computer or laptop). This seems to reduce some issues

c. Be sure no other windows are open on the desktop

d. Ask the learner to reboot the classroom

e. Ask the learner to do a quick re-start on their device

f. Before the next session – do a "speed check" of connectivity – there are several free applications on the internet that check both upload and download speeds. If you find a problem or low speeds, contact your internet provider. Internet providers can actually improve or tweak connectivity if you call them.

g. Rural and remote users – sometimes they simply need to find a McDonalds, community center, Church or some other place with better connectivity than they have at home. During C-19, this may mean sitting outside the location in their car.

5. If you have **international students**, you may need to take some additional factors into consideration. For example, any students who are in China will have an inordinately difficult/impossible time accessing materials hosted by Google (… this is a bit alarming because Google owns so much, including YouTube). You may need to come up with some creative solutions to provide these students with course materials, like putting videos in a Sharepoint folder for students abroad.

6. **Reduce file size of learning objects.**

a. For audio: save files as .mp3 instead of .wav

i. Recommendations for file sizes (bitrate/quality 120)

ii. ACORN file size limit 50MB (reduce size as much as possible)

iii. Methods of reducing file size

iv. Audio should be uploaded to ACORN as a link to a file, not via the "insert media" button in the toolbar

b. For video: save files as .mp4 instead of .mov

i. Recommendations for file sizes (under 50 MB per minute)

ii. ACORN file size limit 50MB (reduce size as much as possible)

iii. Consider using a program like Handbrake (free software to edit video and reduce file size – more information below.)

iv. Methods of reducing file size

I. Resolution set to 720 (HD is unnecessary)

v. In most cases, unless they are very small, videos should be uploaded to YouTube (or alternative hosting place) and links added to ACORN

vi. YouTube recommendations (when uploading videos, make sure to select "Unlisted" in the upload settings to maintain best practices for privacy)

vii. YouTube alternatives (especially for students in China): Vimeo.

Handbrake Guide

What is Handbrake?

Handbrake is a program used to compress video files. It converts a video file that the user put in into another, much smaller, video file. This makes it easier for students to download/load the video to watch it. The process compromises video quality and clarity however for longer videos this is a worthy trade off. You do not need to use Handbrake if you record the video with PowerPoint or OBS, since you can choose the video quality in PowerPoint.

How to use Handbrake

1. Download Handbrake from here https://handbrake.fr/downloads.php make sure you pick the correct version for your computer
2. When you launch Handbrake you will be prompted to put in your video file, you can simply drag and drop it into the app
3. You will be loaded into the summery tab, find category marked as Format and select either "WebM" or "mp4". mp4 is better however to set it as mp4 you must do some additional steps (see the end of document BEFORE you start).
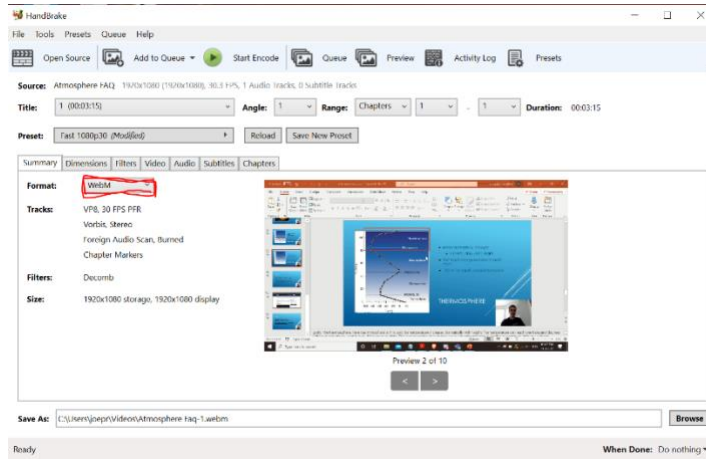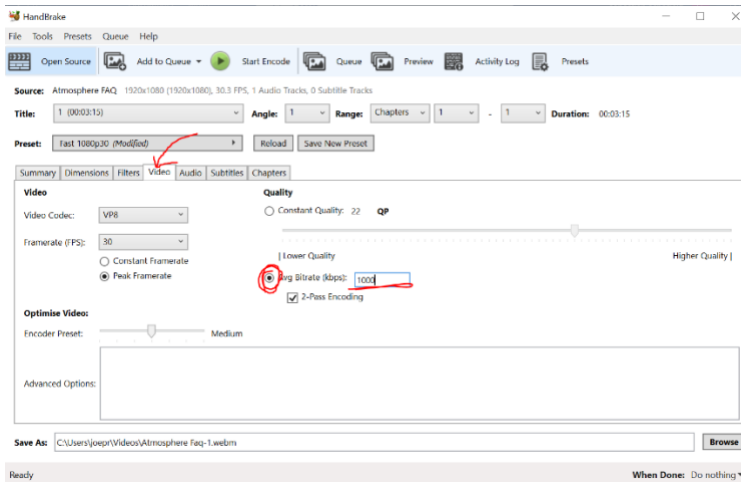
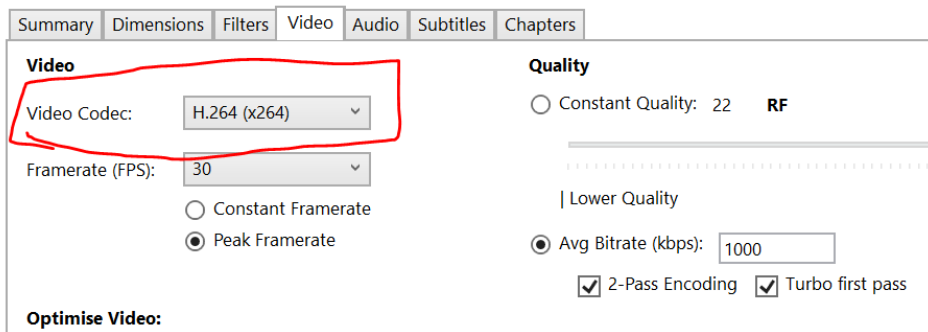If you choose to do mp4 you should also click on the "Web Optimized" option
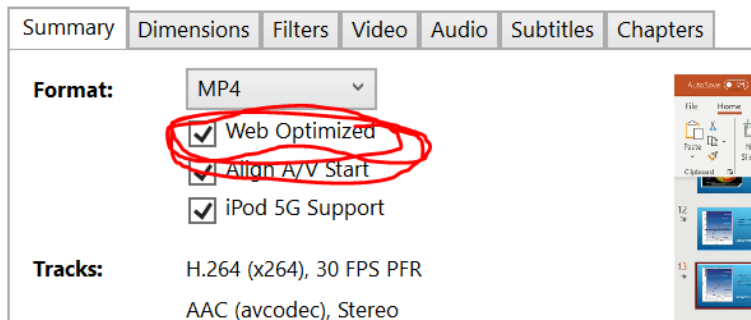
4. Next click on the Dimensions tab, set the dimensions as 854 x 480, this is to reduce the size of the file
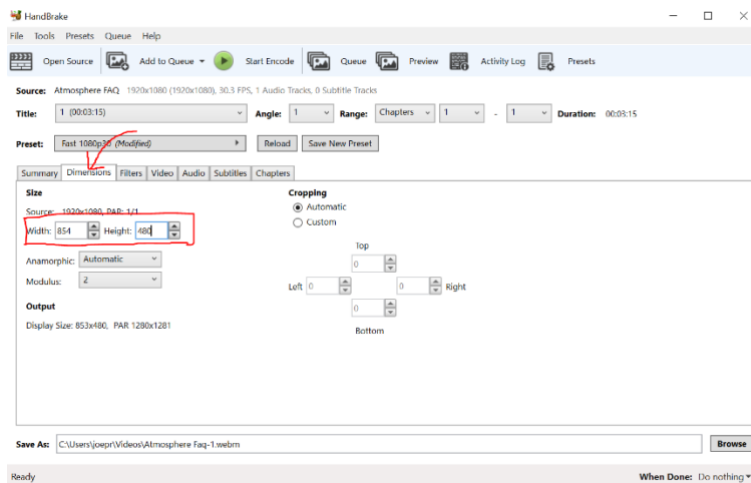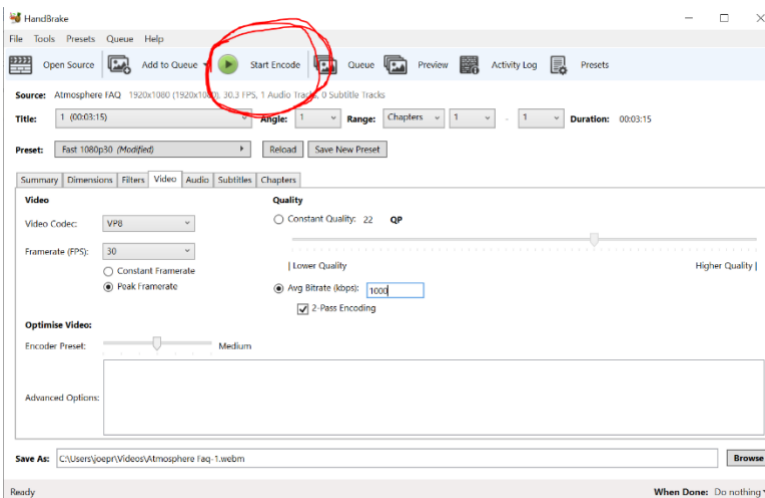
5. Next click on the Video tab, and select "Ave Bitrate (kbps)" in the box you should type 1000.

For mp4 you should also change the "Video Codec Option" to be H.264 (x264)


6. Simply click encode on the top of the screen when all of that is done!

7. (optional) to set the video as mp4 you must click on the Tools menu and select preferences. Select the output files menu and under "MP4 File Extensions" select "Always use MP4". You must restart Handbrake before you can export your project.
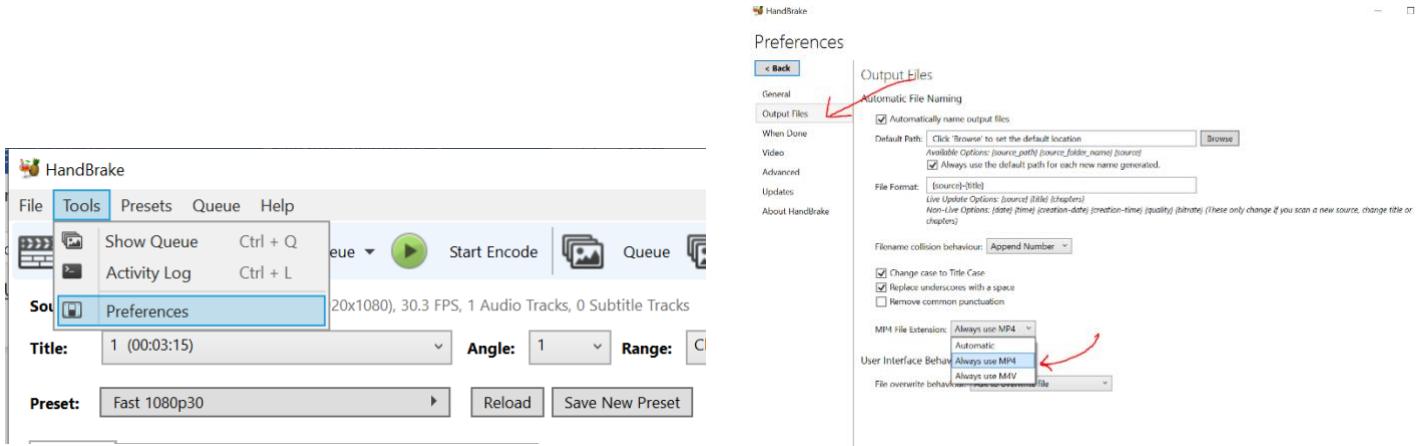
8. (optional) if you want to avoid having to do the same steps for every video you have you can click the "save new preset" button. just be sure to put 845 x 480 in the dimensions box when it pops up.
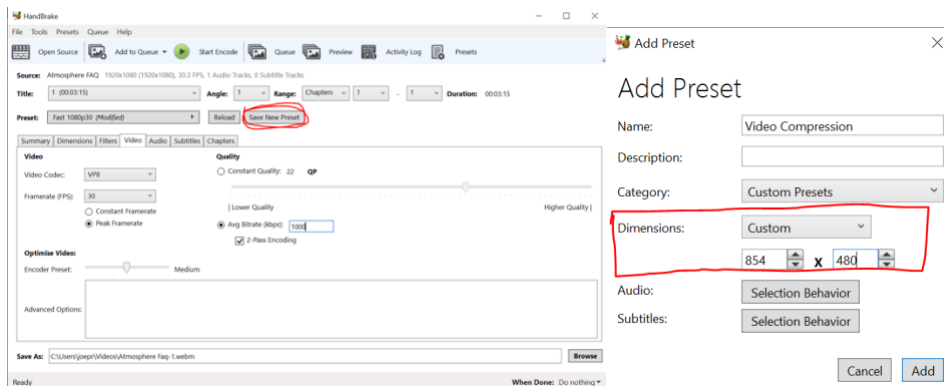
9. (optional) to load a saved preset click on the preset menu, find your preset in the custom preset submenu and select it
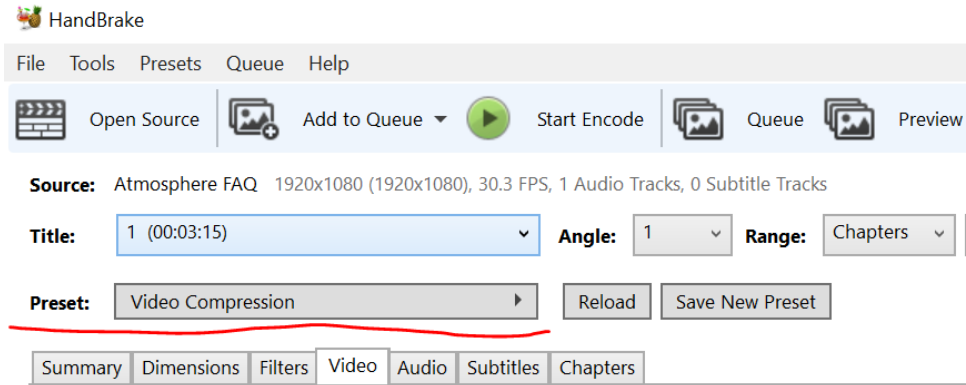
These new video files can then be shared on ACORN with your students like any other file, with the benefit of less buffering!