Here are the steps that I used to create pre-recorded video with picture-in-picture:

Hardware:

* Tablet (example – surface pro 7)
* Stylus (this lets me write on the surface during the video lecture.  This is important for math/physics content.)
* External webcam (I bought a papalook – only around $100 through amazon.  It has a built in microphone as well.)

Software:

* Onenote – I am using this (rather than powerpoint) for my lectures.  It is great for organizing the course material.  You could also just use powerpoint.
* KalturaCapture – for capturing the video on my tablet – available for free from McMaster
* Macvideo – this is like “youtube”, but also is powerful in terms of being able to edit the videos, do automatic captioning, embed quizzes
* Avenue – we are recommending that all instructors use the same Avenue template to make it easier for the students to navigate.

Initially I needed to have:

* Kaltura installed locally on my tablet. Here is how you download the kaltura capture software:
  + Login into macvideo (macvideo.ca) – click on the head/shoulders on the top right; choose login and then login with your macid
  + Follow the instructions on this link: <http://mechfaculty.mcmaster.ca/onlinemat/3.1%20Installing%20Kaltura.pdf>
* An external webcam that I had plugged into the usb port on my tablet.  (Alternatively, people can use the camera that is on their tablets, but the angle is weird so probably won’t look too good)

To start creating the video lecture:

1. Open one-note or powerpoint or whatever lecture creation or word-processing software is being used (I used one-note)
2. Open Kaltura Capture
3. Click on “new recording” – red rectangle in top right corner of window
4. Select the desired settings:
   * screen (Surface…)
   * camera (I choose “Full HD webcam”)
   * audio (default for me – “Microphone array…”)
5. click on red circle to start recording – need to wait a few seconds for it to be ready.
6. Able to talk to the webcam camera and write on the screen.  Kaltura will capture both.
7. Click on “white square” to end the recording (it is next to the red circle in Kaltura rectangle). Also note that you can pause and then re-start recording. This is handy if you are loading up stuff on the computer for the students to view.
8. Click on “save and upload” to upload to macvideo  (this seems to be very slow.  Also – then it seems to take time to process it once on macvideo)

Both video streams (tablet screen and the “talking head”) are put onto macvideo.  When viewed from macvideo, the two videos can be viewed as “picture-in-picture”.

After the video has been uploaded to Macvideo, you will still need to modify the permissions and request the captioning to be done:

1. Login into macvideo (macvideo.ca) – click on the head/shoulders on the top right; choose login and then login with your macid
2. You can get to all your videos by clicking on the head/shoulders on the top right and select “my media”. This will show a list of all your videos.
3. Click on the video title to select a particular video
4. Click on Actions – there a bunch of options here to set characteristics of your video:
5. Actions 🡪 Publish 🡪 “unlisted” ; “save” (this will allow the page to be visible to anyone with a link to the page)
6. Actions 🡪 Caption and Enrich . Choose this to get captioning incorporated into the video. There are three boxes: Service – choose “machine”; language “English”; feature “captions” (not really much choice here anyway). Then click “submit”. This will start the request for captioning. If it doesn’t work, then refresh the screen (F5) and try again. Once it is processed, a “closed captioned” symbol (CC – inside a circle) will appear at the bottom of the screen when the video is viewed.
7. Actions 🡪 Edit. This allows you to change the name and description of the video.

After the captioning is completed, you may need to review the accuracy of the speech to text translation by the software:

1. Get to the video (steps 1-3 above)
2. Actions 🡪 edit
3. Click on the tab “captions” ;
4. Click “edit captions” (blue rectangle)
5. Can then scroll through the captions. Click on the caption I wish to change and type the revised text. I can click on play and that will start the video at the time for that caption.
6. After making the edits, click “save”

Video editing:

Might need to do this if there were interruptions when I was making the video and I need to cut out a portion of the video.

Roshan Bashar (Mech Eng summer student) created outstanding short videos on this. Here's a link to the channel that has the video tutorials:

<https://www.macvideo.ca/channel/Video%2BTutorials/169957071>

The Video Editor video should be good for cutting the middle of your videos. Embedding a quiz explains the quiz function.

How to embed quizzes into an existing video using Macvideo editing:

1. Create the video and upload to macvideo. When I initially make the video, I should note the time in the video when I want to quiz to appear.
2. Login to macvideo and go to the video that I wish to add a quiz to.
3. Actions 🡪 edit
4. Click on rectangle “launch editor”
5. Click on “cube” on the left column to get into quiz mode
6. Move the timeline (vertical blue line at the bottom of the screen) to the time where I want to quiz to appear
7. Click “start”
8. Click “add a question” and choose type (multiple choice, true/false, etc.)
9. If I choose multiple choice – type question in box; correct answer in noted box; additional answers – click on plus sign to create more boxes. Seems that only one correct answer is allowed. The correct answer initially appears in the top box. Can move it by clicking on 8 white dots and dragging it where I want it to go.
10. Click “save”
11. By default, it saves a copy of the video with the test. The original video (w/o the test) remains as well.
12. I can change some properties of the quiz:
13. Click on details for: welcome message and quiz name
14. Click on “scores” – viewers can see how they did and the correct answers
15. Click on “Experience” – permissions: to allow them to change answers; skip questions; no seeking forward

Other features:

* Can check analytics of video viewing:
  + Select the video
  + Actions 🡪 Analytics

**Managing CHANNELS in MacVideo**

Channels are a way of “sorting” the videos that I have made. All the videos are available in the “my media” section of macvideo. If I need to edit a video, it is done from the “my media” section.

To create a new channel:

* Login to macvideo
* Click on head and shoulders and select “My Channels”
* Click on blue rectangle: + Create Channel
* Fill in name of channel; privacy (Eu-Gene recommends “Private”)

To add a video to a channel:

* Login to macvideo
* Click on head and shoulders and select “My channels”
* Click on the channel that I wish to add media to
* Click on blue rectangle: + Add to Channel
* All my media will show up and I just select the ones that I wish to add to the channel (click on little square next to the video)
* After selecting all the videos; I go to the top and click on blue rectange: “Publish”

**Live Lectures (or grad student meetings) – Using MS-TEAMS:**

Settings for tablet and desktop computers:

* Desktop:
  + Webcam video – ON
  + Webcam microphone – ON
  + Desktop speakers – ON
  + Open MS-TEAMS – start the recording on the desktop
* Tablet:
  + Tablet video – OFF
  + Tablet microphone – MUTED
  + Tablet speakers – set to zero volume (to avoid feedback between desktop and tablet)
  + Open MS-TEAMS; screen share from the tablet (choose desktop); open one note to do writing

With this approach, I am able to make a video of my screen (from the tablet) plus my face in bottom right corner (from desktop).