

# Teaching with OBS & Zoom



**David Frost, Mech. Eng.**

# My Zoom classes so far...

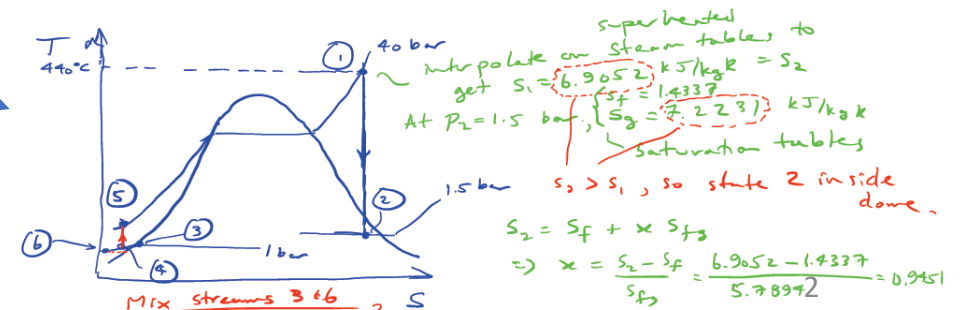
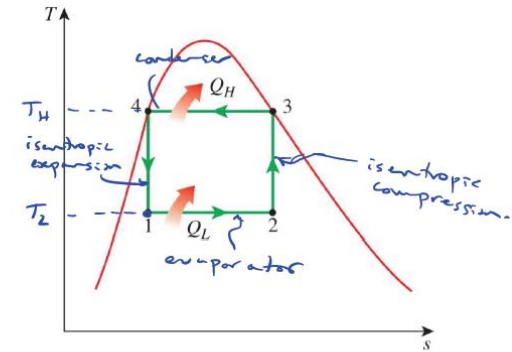
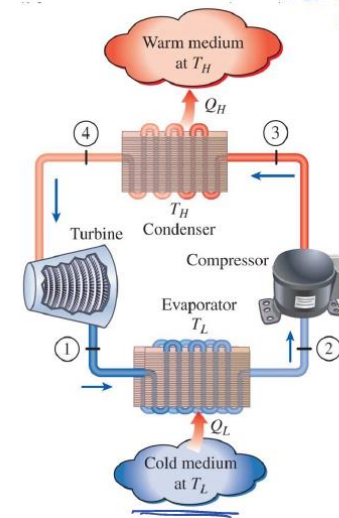
## MECH 341 Thermodynamics 2:

- Main tools:
  - Annotate partial notes in Powerpoint on PC tablet (Lenovo Yoga 940), using polling questions periodically
  - Use large iPad with Notability to work out problems in tutorials
  - Share screen & record in Zoom

### Carnot refrigeration cycle

Practical issues:

- mostly liquid in turbine generates problems with operation + generates little work
- some liquid in compressor makes operation difficult.

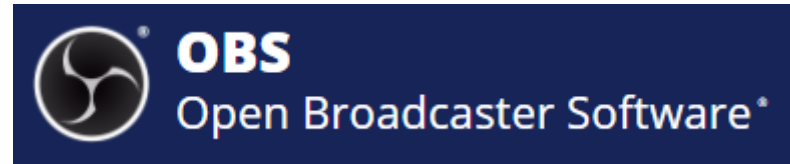


# My Zoom classes so far...

## **FACC 100 Introduction to the Engineering profession:**

- **Course characteristics**
  - Large classes (~160 students/section)
  - Wide range of topics
  - Heavy use of team discussion in breakout rooms (~1/3 of class time)
  - Very interactive, student teams use Jamboard in breakout rooms
- **Key challenge: getting students to attend classes and actively participate in small-group discussions**  
→ **Needs a different approach**

# Key features of OBS for teaching?



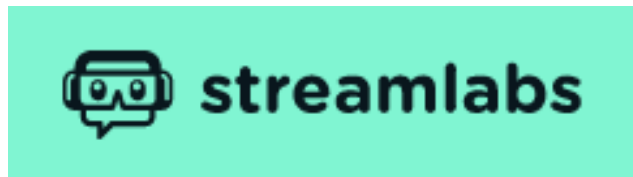
- Switch between multiple scenes containing different elements
  - Video feeds, Powerpoint, images, video & sound clips, text, browser windows, etc.
- Record within OBS with higher resolution than Zoom
- Stream OBS output to Zoom in either of 2 ways:
  - Share a portion of your screen in Zoom
  - Generate a “virtual cam” in OBS and send feed to Zoom as just another camera

# What do I need to get going?

## Essential software:



or:



- <https://obsproject.com/download>
  - Open source – **FREE!**
  - Some learning curve
  - Fast, many plug-ins
  
- <https://streamlabs.com/>
  - Shell running OBS Studio underneath
  - More user friendly to get started
  - Slower than OBS, not updated as frequently

# What do I need to get going?

## Highly recommended hardware:

- A second monitor
  - OBS on one monitor
  - All other software on the other

**~\$150**

**Optional:  
LED lights**

**~\$45**



# What do I need to get going?

## Up your hardware game (optional):

- External USB condenser microphone
- External 1080p webcam
- Or (better) use existing digital camera with a 1080p video capture card



**~\$30-130**



**~\$40-60**



+



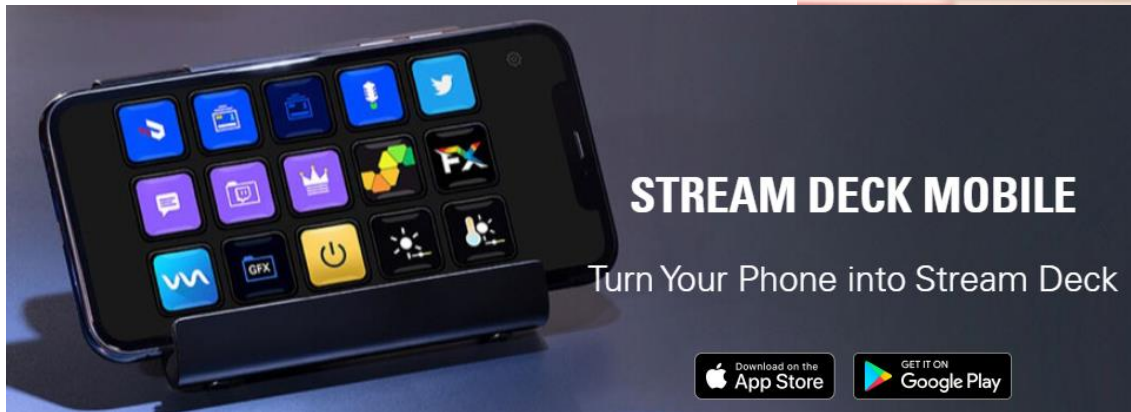
**~\$20**



# What do I need to get going?

## Optional, but very convenient: Stream Deck

- Phone app or hardware



**Free**



**~\$200**







# **What the class sees: Teaching with OBS & Zoom**



**David Frost, Mech. Eng.**



# What I see: Teaching with OBS & Zoom



## David Frost, Mech. Eng.

Powerpoint-desktop

Properties Filters Window [POWERPNT.EXE]: Class 5 Equity and Diversity in Engineering - PowerPoint

Scenes

- Expand
- Flip
- Powerpoint on desktop with drama
- Loading
- Intro2.1 w/subscribe
- Intro3.1
- Intro3

+ - ^ v

Sources

- Chrome window
- Wide screen
- FACC 100 Introduction to the Engineering Profession
- Canon 5D Mk IV camera
- Powerpoint-desktop
- Shure SM7B

+ - ⚙ ^ v

Audio Mixer

- Canon 5D Mk IV camera: 0.0 dB
- Desktop Audio: -0.4 dB
- Desktop Audio 2: -0.4 dB

Scene Transitions

Move

Duration 1000 ms

Controls

- Start Streaming
- Start Recording
- Start Virtual Camera
- Studio Mode
- Settings 10
- Exit

# OBS control panels:

