

Online Teaching: Challenges and Opportunities

School of Engineering Retreat

(May 26, 2020)





Agenda

- Yang Cao – Challenges and Opportunities of Online Teaching
 - (20 minutes)
- Peter Newbury, Michelle Lamberson – A Solution for Online Teaching
 - (40 minutes)
- Mehran Shirazi – Experience of Teaching First Year Online
 - (20 minutes)
- Gregory Courtice – Tools on Stress management and Understanding Mental Health
 - (20 minutes)
- General Discussions
 - (10 minutes)



Existing Resources - Internal

- **APSC Center for Instructional Support** (Jim Sibley, jim.sibley@ubc.ca)
 - <http://cis.apsc.ubc.ca/preparing-for-fall-2020/>
- **CTLT and CTL**
 - <https://ctl.ok.ubc.ca/teaching-remotely/>
 - <https://institute.ctlt.ubc.ca/remote-teaching-institute/>
 - [https://wiki.ubc.ca/Documentation:CTLT_programs/CTLT_Institute/2020-Remote-Teaching-Institute#Session Resources](https://wiki.ubc.ca/Documentation:CTLT_programs/CTLT_Institute/2020-Remote-Teaching-Institute#Session_Resources)
 - [Keep-teaching.ubc.ca](http://keep-teaching.ubc.ca) & keep-learning.ubc.ca
- **School of Engineering Resources**
 - <https://engineering.ok.ubc.ca/online-education-strategies/>



Existing Resources - External

- EngineersCanada: Online Transition Resource Documents
 - Weekly meetings – sharing of best practices
 - <https://collaborate.engineerscanada.ca/folders/3be69qgt>
- ASEE Resource Central (<https://resources.asee.org/>)
 - 8 Ways to Be More Inclusive in Your Zoom Teaching
 - <https://www.chronicle.com/article/8-Ways-to-Be-More-Inclusive-in/248460?cid=cp275>
 - How to Be a Better Online Teacher
 - <https://www.chronicle.com/interactives/advice-online-teaching>
 - A living (room) lab
 - <https://www.seas.harvard.edu/news/2020/05/living-room-lab>



Existing Resources - External

- Arizona State University Free Resource
 - teachonline.asu.edu
 - Online Delivery of Electrical Engineering Programs (from 2013)
 - Electrical Engineering program was the first bachelor's level ABET-accredited engineering program available 100% online.
 - 2400 BSE student (~1400 online); More online enrollment
 - <https://resources.asee.org/2020/04/14/online-delivery-of-engineering-programs-tips-you-can-use-from-an-experienced-abet-accredited-program/>



Existing Resources - External

- **How to Transition Your Lab to the Virtual Classroom**
 - <https://innovationatwork.ieee.org/how-to-transition-your-lab-to-the-virtual-classroom/>
 - <https://digitalllearning.ucf.edu/ilab/remote-labs/>
- **Best Practices for Student Remote Work**
 - <https://chec.engineering.cornell.edu/best-practices-for-student-remote-work/>
- **Rapidly Transitioning Campus Courses Online**
<https://facultyguide.weebly.com/>
- **Industry Resource**
 - Labview; Matlab; Quanser; Merlot
(<https://www.merlot.org/merlot/index.htm>)



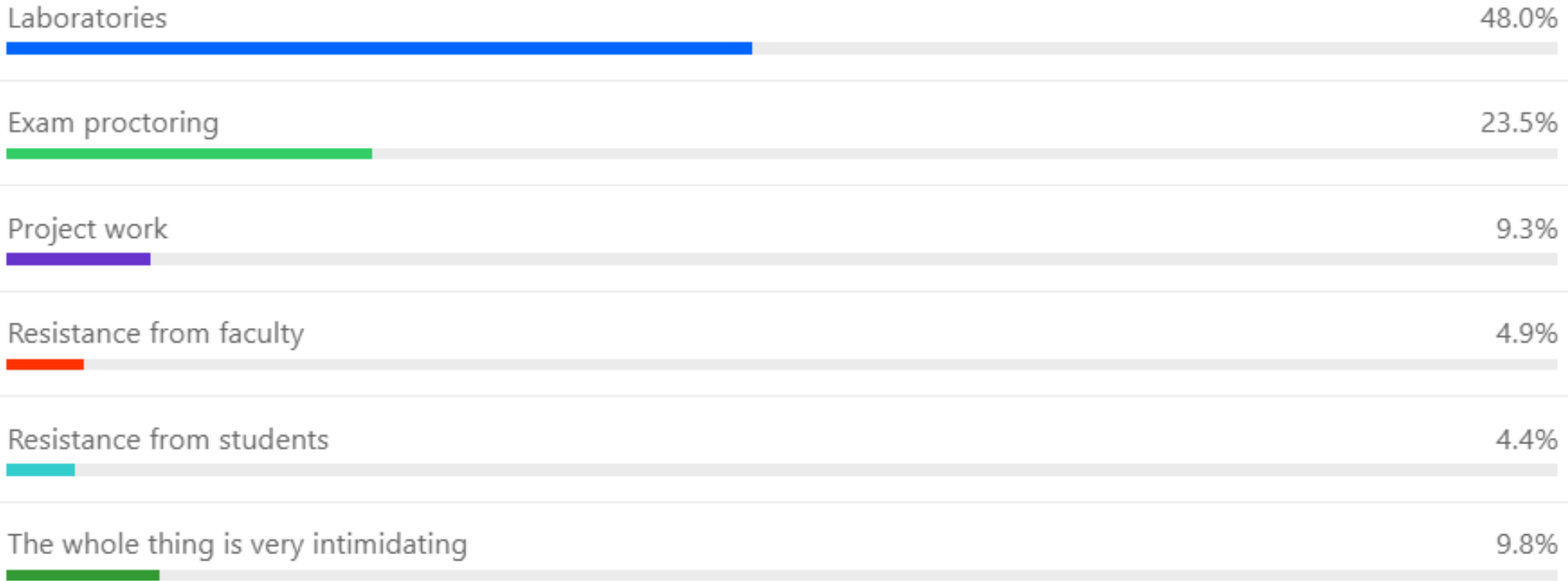
Existing Initiatives

- Teaching Online Learning Community at UBCO
 - Janine Hirtz: janine.hirtz@ubc.ca
 - Every Friday 1:00-2:00PM, May 1 – August 28
<https://ubc.zoom.us/j/92661994096>
- APSC Online Teaching and Learning Working Group
 - Develop common set of tools and technology supports
 - Identify models for effective online teaching



Challenges with Online Teaching Engineering

What is your biggest challenge when it comes to quickly converting your class to online delivery?

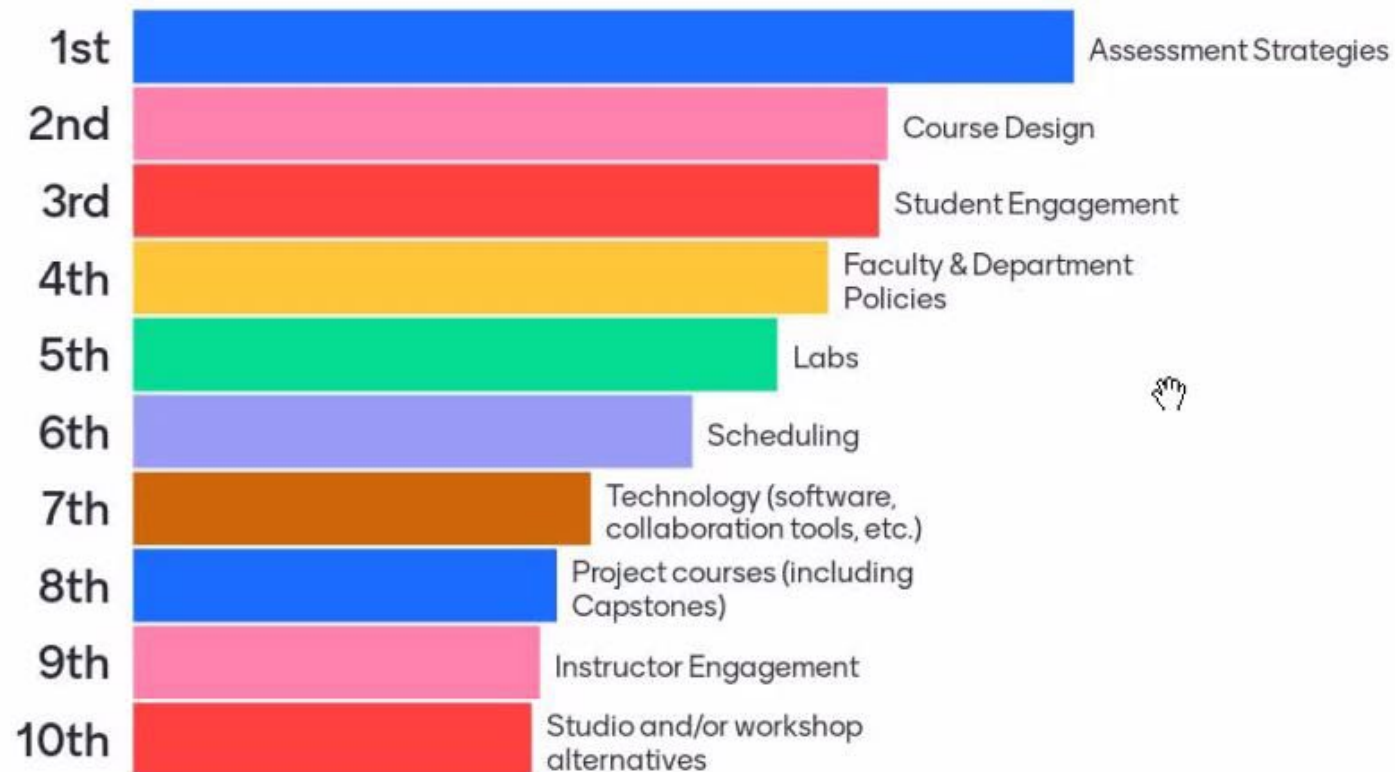




Challenges with Online Teaching Engineering

- From APSC Working Group

Topics for next week: what is most urgent for you?
(select up to 3)



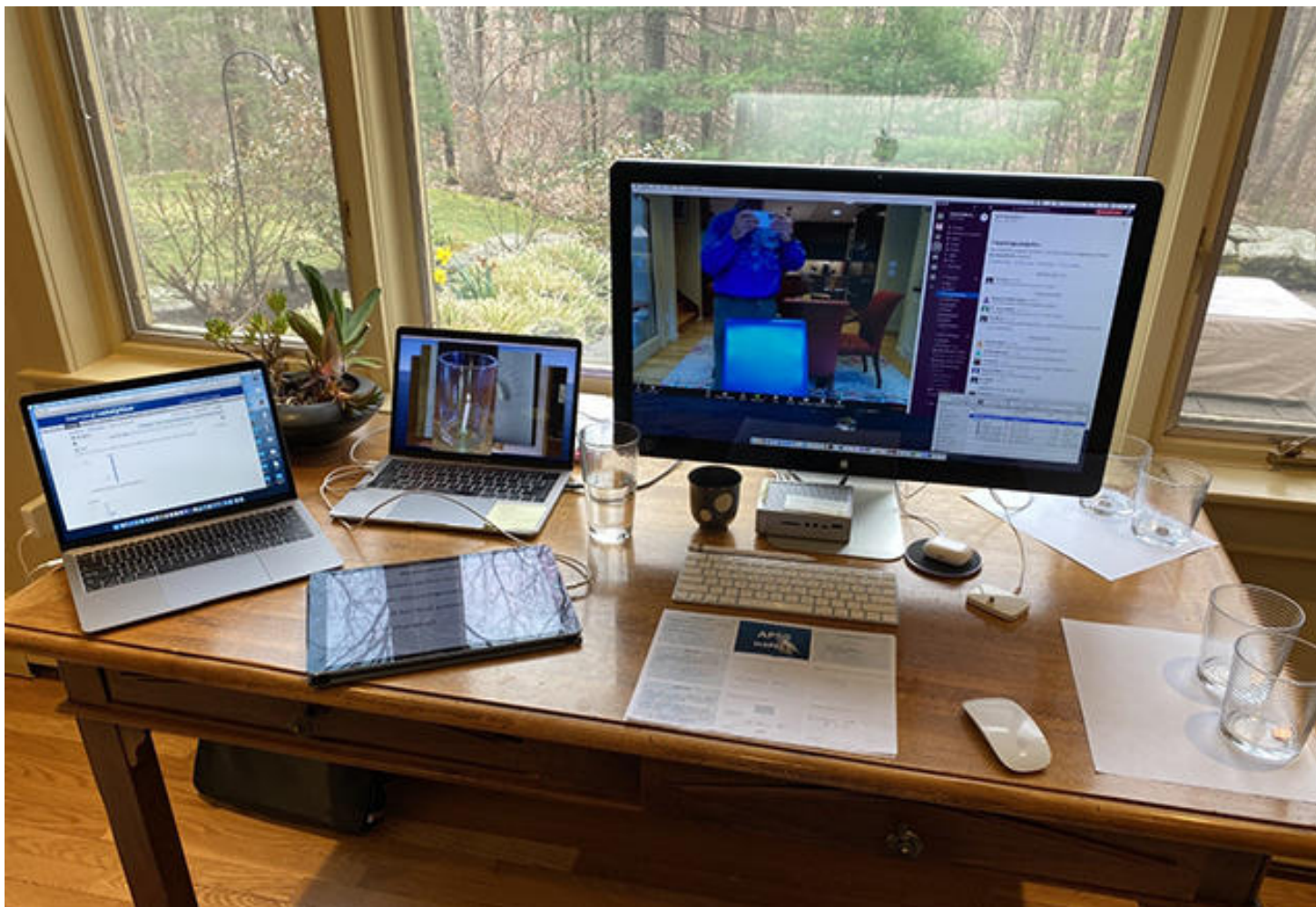


Things to Consider for Online Teaching Engineering

- Technology requirements for both instructor and student
- Enhance Course Materials for online Delivery
- Assessment Design
- Communication Strategies
- Labs Experiences
- Collaboration methods for students
- Student Engagement
- Student Mental Health (workload)
- Integrity



An Example of Computer Set-up



https://www.seas.harvard.edu/sites/default/files/styles/embedded_image_large/public/2020-05/mazur_setup_ap50_web.jpg?itok=j3qVGpWr



Recommended Sound Recording Setup

- Dr. Peter Ostafichuk made an excellent video on microphones <https://www.youtube.com/watch?v=elvRCWmMjug>
 - Blue Yeti (<https://www.amazon.ca/Blue-Microphones-Yeti-USB-Microphone/dp/B002VA464S>)
 - Rode Podcaster (<http://www.rote.com/microphones/podcaster>)
 - A studio boom arm (<http://www.rote.com/accessories/psa1>)
 - A Shock Mount (<http://www.rote.com/accessories/psm1>)
 - <https://www.amazon.ca/Blue-Microphones-RADIUS-Microphone-Shock-Improved/dp/B00TTQLA50>
- Setup for Zoom
 - <https://youtu.be/ACNGhPKnmok>



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Things to Consider for Online Teaching Engineering

- Enhance Course Materials for online Delivery
 - Distribution of synchronous and asynchronous content
 - Structured activities to break the boredom
 - Sample structure: Short videos on a single topic, include animations, integrate self-assessments, pass quiz before progressing
 - Perfectionist: Produce, debug, produce, pilot-deliver, assess, evaluate, debug, repeat ...



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Things to Consider for Online Teaching Engineering

- Assessment Design
 - Maximize the Canvas capabilities such as Canvas Quiz, Survey, Online Submissions
 - Less exams, more project?
 - More realistic assessment methods and should be driven by learning outcomes



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Things to Consider for Online Teaching Engineering

- Communication Strategies
 - Online teaching requires clear instructions
 - Syllabus needs to reflect the activities that are unique to online delivering
 - Format of labs, tutorials, office hours etc.
 - Email through FSC and Canvas



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Things to Consider for Online Teaching Engineering

- Labs Experiences
 - Video demonstrations
 - Hardware kits
 - Simulations
 - CAD
 - Web-controlled experiments
 - VR



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Things to Consider for Online Teaching Engineering

- Collaboration methods for students
 - Microsoft Team
 - Google Drive
 - Dropbox
 - Social Media: facebook, snapchat, slack etc;



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Things to Consider for Online Teaching Engineering

- Student Engagement
 - Office hours through skype, zoom or collaborate ultra
 - Informal gatherings
 - Piazza
 - Canvas discussion forum
 - Social media tools
 - Online tools: PollEverywhere, Mentimeter, Presentain
 - Encourage web cams to be on
 - Consider flipping –use class time to solve problems
 - Create conversations rather than just an announcement



Things to Consider for Online Teaching Engineering

- Student Mental Health (workload)
 - Is it becoming more stressful because of online learning
 - No Surprise
 - 2.5 hours/AU (weekly AU) inclusive of all activities
 - Balance across courses



Things to Consider for Online Teaching Engineering

- Integrity
 - Trust or not to Trust?
 - ProctorU
 - RPnow (SoftwareSecure)
 - Examity
 - Honor lock
 - Respondus
 - Just use Zoom?

Questions

