



Impact of COVID-19 on Teaching and Learning: *Lessons learned and Our Efforts for Continuous Improvement*

Jane Dong and Nancy Warter-Perez
EEAC Meeting

Oct. 14, 2020



COLLEGE OF

**ENGINEERING, COMPUTER
SCIENCE, & TECHNOLOGY**

Assessing the Impact of COVID-19 on Teaching & Learning

- What happened in Spring 2020
 - A rapid conversion to remote instruction in mid-Spring due to COVID 19
 - More than 400 courses/labs were converted in 1-week period
- What is the impact on teaching & learning at ECST?

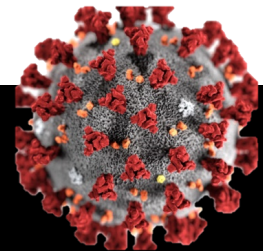


Assessment drives learning and reflection:

- Learn from all constituencies: students, faculty, staff, employers, industry partners, etc.
- Reflect:
 - What did we learn?
 - How can we do better in the future?



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ECST COVID-19 Survey

To better understand the impact of COVID 19 on students, faculty, and staff, the College conducted a periodical survey:

- **First survey** asked for [comparison](#) of class experience before and after the transition to remote instruction
- **Follow-up survey** track how student, faculty and staff experience changed during the Pandemic:

Teaching Effectiveness

Student Engagement

Level of Stress

Other factors that
impact student
learning

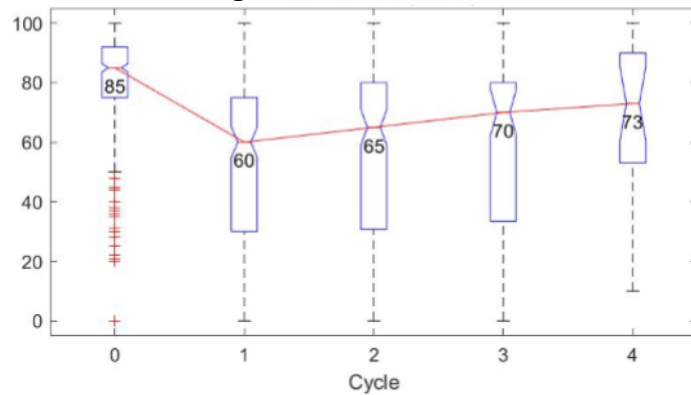


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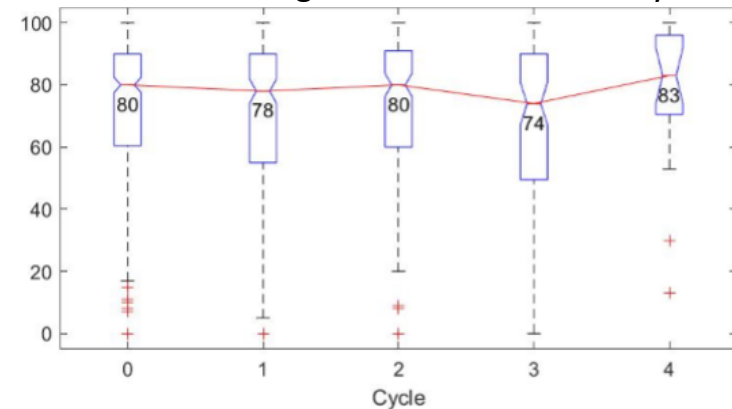
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Student Response Over Time

Student rating on effectiveness of instruction



Student rating on instructor flexibility



Timeline of survey

Cycle 0: Feb 15 (before Pandemic)

Cycle 1: April 15

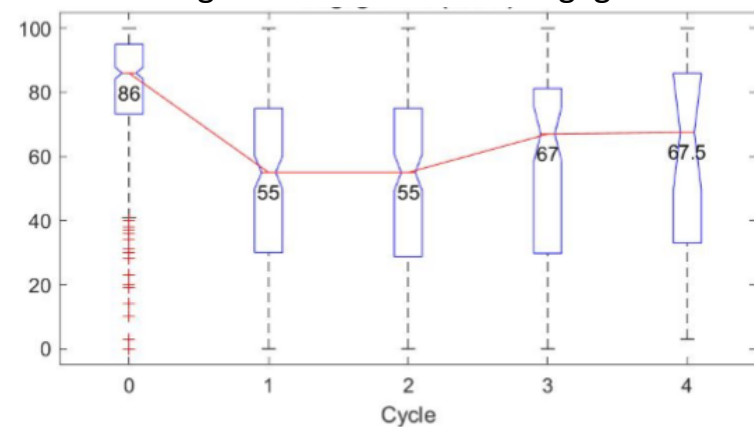
Cycle 2: April 29

Cycle 3: May 13

Cycle 4: May 28

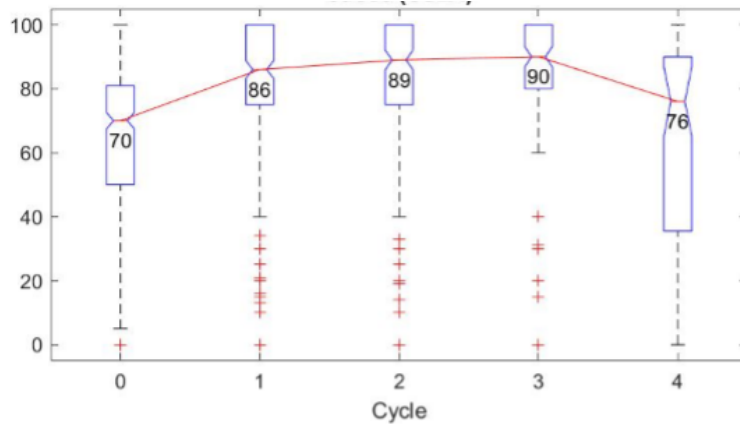


Self-rating on level of student engagement

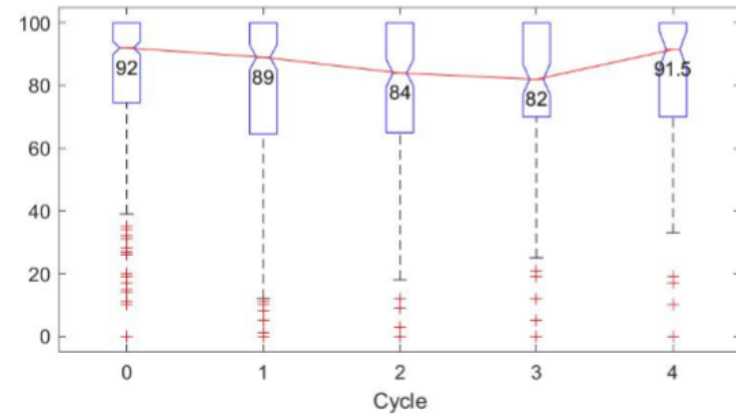


Student Response Over Time

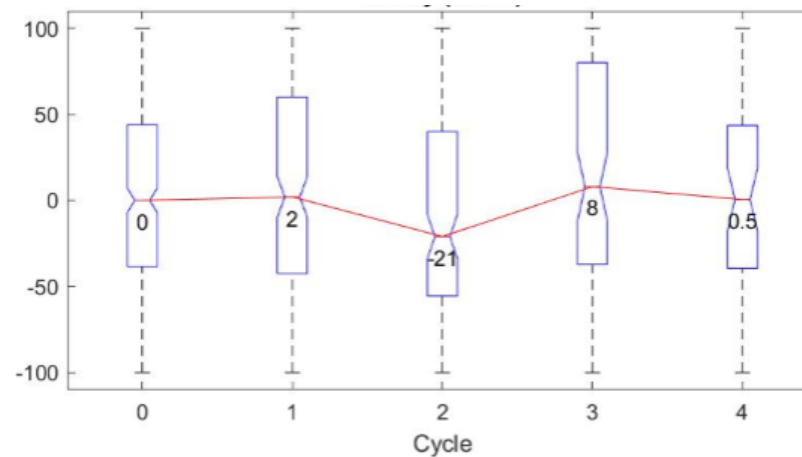
Student rating on level of stress



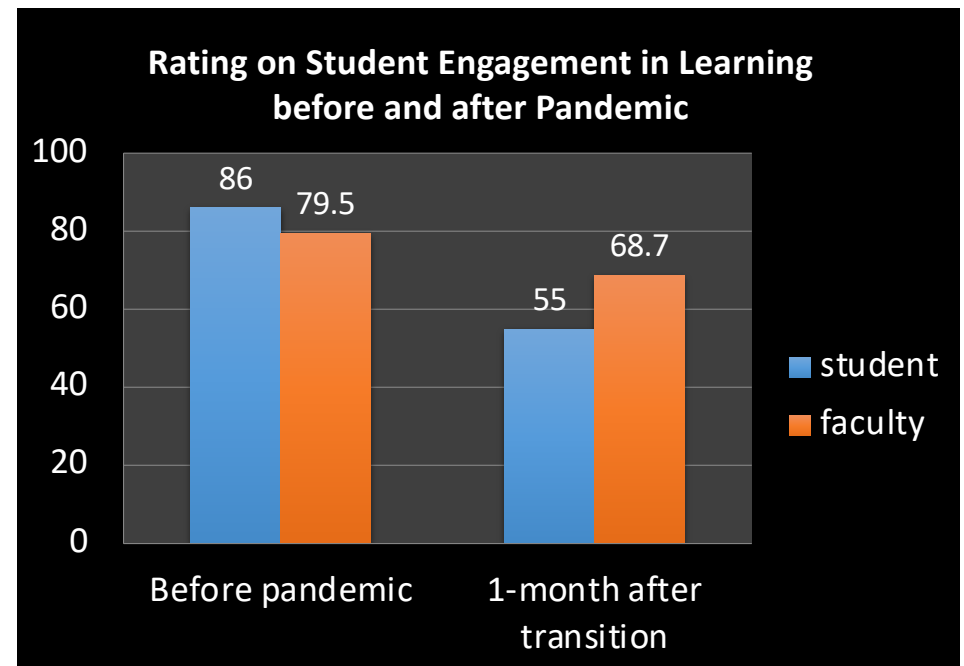
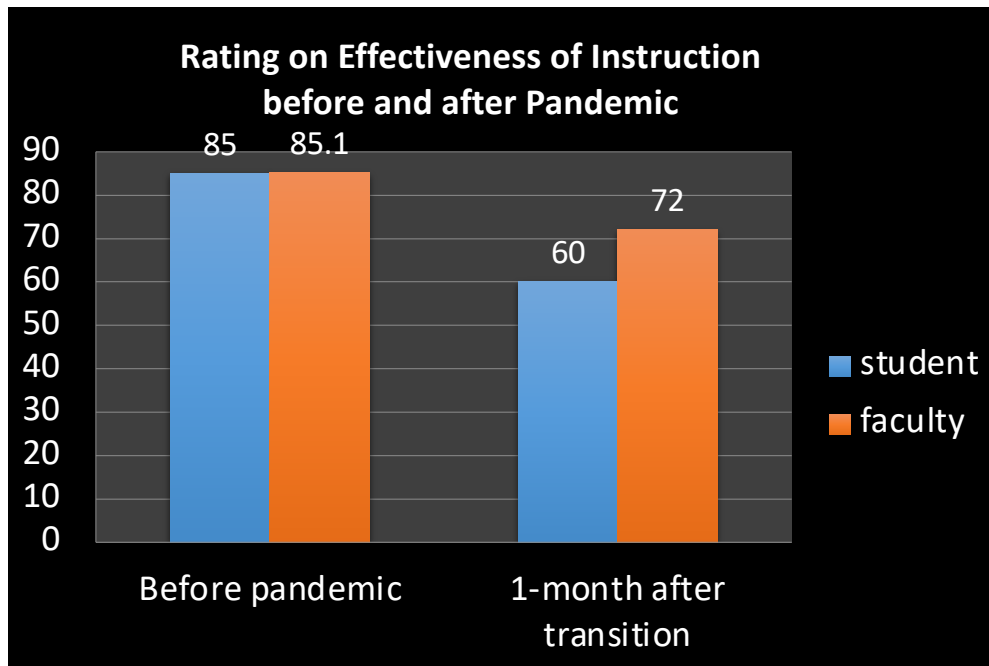
Access to computer resources (including Internet)



Impact of family obligation (can be positive or negative)

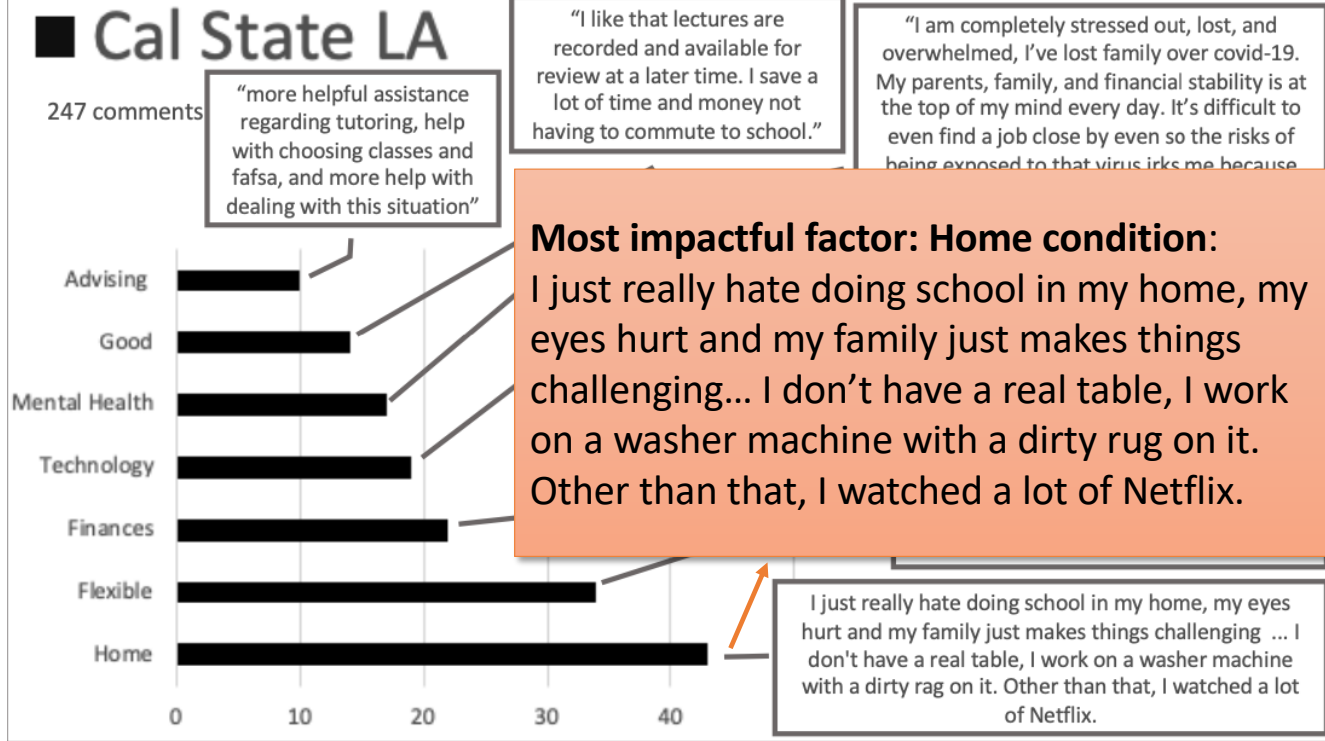


Student vs. Faculty Perception on Impact of COVID 19 on Teaching Effectiveness and Student Engagement



***Overall, students reported bigger impact by COVID 19, compared to faculty's view.
Why?***

Students Feedback on their experiences



Statistics based on the responses to open ended question: "Is there anything about the stay-at-home situation that you want to share with us?" one month after Pandemic



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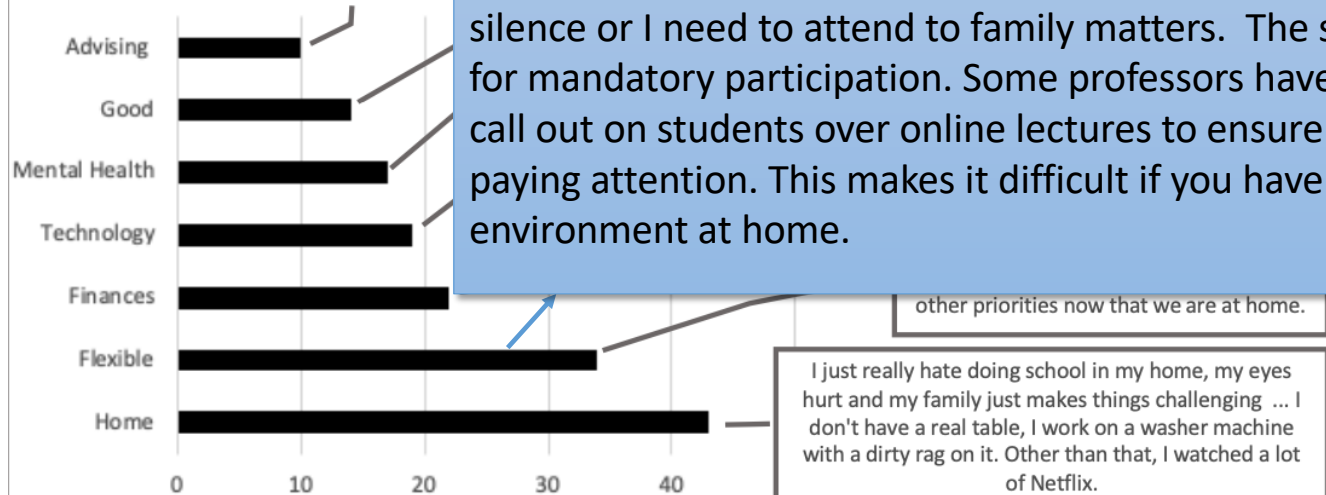
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Students Feedback on their experiences

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247 comments

"more helpful assistance regarding tutoring, help with choosing classes and fafsa, and more help with dealing with this situation"



2nd impactful factor: flexibility & understanding

Professors should be more understanding in terms of exams and class participation. Having rigid set times for exams makes it difficult. At times I may not be able to take the exam in silence or I need to attend to family matters. The same goes for mandatory participation. Some professors have decided to call out on students over online lectures to ensure they are paying attention. This makes it difficult if you have a loud environment at home.

other priorities now that we are at home.

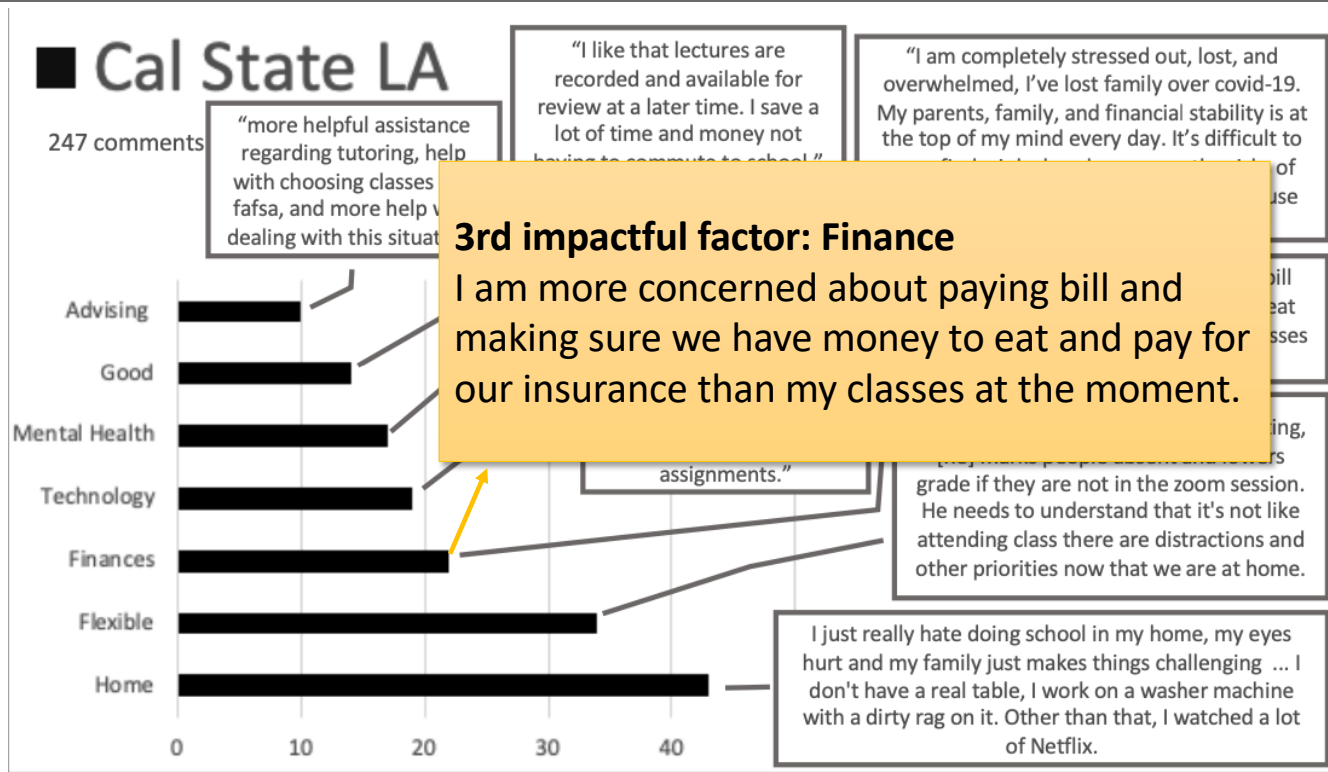
I just really hate doing school in my home, my eyes hurt and my family just makes things challenging ... I don't have a real table, I work on a washer machine with a dirty rag on it. Other than that, I watched a lot of Netflix.



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Students Feedback on their experiences



Other Common feedback:

1. Missing lab / hands-on projects
2. Missing study groups and teamwork
3. Missing interaction with peers (community)



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Open Discussion, Reflection, and Action Plan

COVID 19
amplifies
existing
challenges
including
equity issues

What can we do to
enhance instruction
effectiveness and
student
engagement?

- Enhance **digital infrastructure** to better support remote T&L
- **Creative solutions** to enhance student lab experience & to achieve critical outcomes
- **Support faculty** to prepare for Fall instruction
- Strengthen **student support** (community building)



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Enhance Digital Infrastructure for Remote T&L

- Video camera sets are installed to support virtual labs.
- **Worked with ITS to set up Remote desktops** are ready for students to access licensed software (including software with special ECST licenses)
- Set up website to show various ways to access Cal State LA and ECST licensed software → useful resources for faculty and students

Software Title ▼	Home Use License	Remote Access (Labstats)	MyTools (virtualized application)	Cloud (vendor hosted)
Adobe Creative Cloud	Yes (\$15 for students, free for faculty/staff)	Yes	Yes	No
ANSYS	Yes (Temporary during COVID-19, contact your faculty for license info)	Yes	No	No
ArcGIS	No	Yes	Yes	No
AutoCAD	Yes	Yes	No	No
Cadence (Pspice, OrCAD)	No	Yes	No	No
CATIA	No	Yes	No	Yes, must register by June 30, 2020

Including link to access home use license



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Rethink the Lab Instruction

- Lab Tiger Team was established by the end of Spring
- Explore ways to achieve learning outcomes for labs
- One recommendation: remote lab kits

Planning

Implementation: huge effort with tight timeline

- Design, prototype and testing the lab kits
- Fabrication and mass production
- **Need to complete the cycle of design & implementation in less than 2 month with a lot of challenges and additional requirements imposed by **COVID 19**: safety concerns, lab access, backorder, shipping delay...**

- **Remote lab kits** were successfully developed to offer real hands-on experiences for 20+ lab sessions
- Close to 500 students picked up the kits
- Timeline to production: 1 month & 19 days

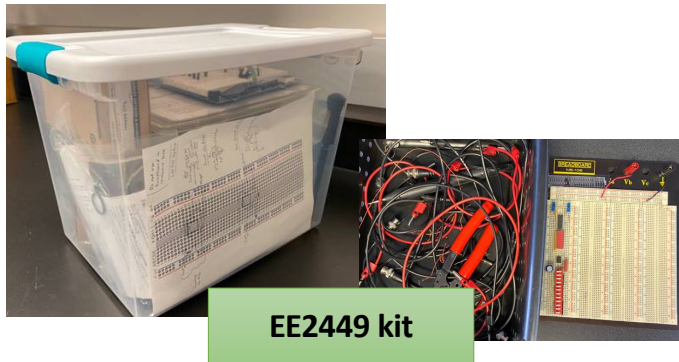
Results



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CE/ME/EE Lab Kits



ME 3039 (CE3140) kit Packaging



Kits assembly steps



Lab Kits ready to go!



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A Glance of the Drive-thru Site for Kits Distribution

Our staff worked with EHS, Facilities, and Transportation to prepare for drive-thru site

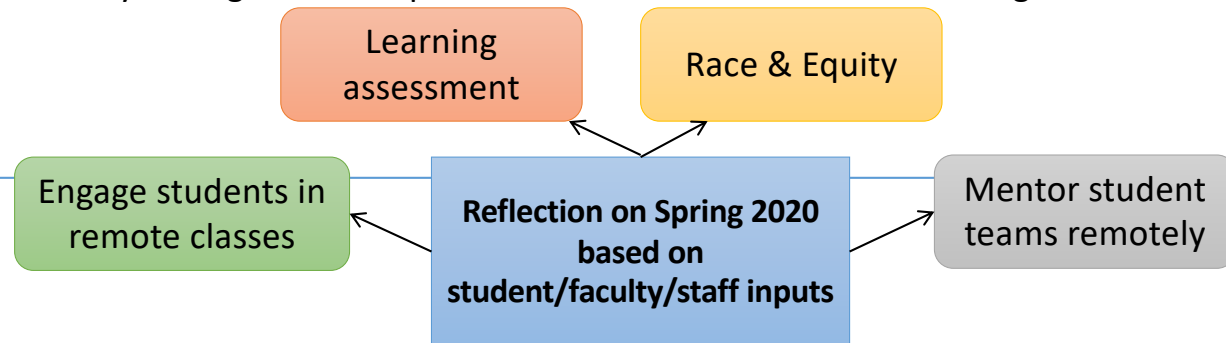


Drive-thru site for kits pick-up



Support Faculty to Prepare for Fall Instruction

- Encourage faculty to participate in Alt-Instruction Summer Institute and enhance the design of Fall courses (*112 ECST faculty participated, and 80 completed the requirements for institute*)
- Host ECST Teaching and Learning Academy Summer Sessions to strengthen a community that supports shared-learning
 - Five Sessions from July to August with topics of common interest for ECST colleagues



Engaging Students in Remote Classes- Lessons Learned



Jeffrey Santner



Rachel Friedman



Nancy Warter-Perez



Stephanie August

Panel Presentation on Remote Exam/Learning Assessment



Jim Kuo

Lessons Learned: policing didn't work & Let us design assessments that embrace how students learn.



David Raymond and Mathias Brieu

Mastery-based learning: an equity-based student-centered assessment approach



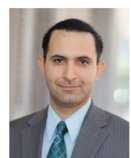
Panel Presentation on Strategies to Mentor Student Teams



Chris Bachman (ME)



Sonya Lopez (CE)



Amini Navid (CS)

Strengthen Student Support (Inclusive Community)

Based on College climate survey and disaggregated student success data, we are providing intentional support to our African American/Black students

Intentional Recruitment:

Offer as many B&AA students the opportunity to participate in STEP and FYrE

Enrollment and retention campaigns
(EAB, Phone, etc.)

Community building:

- Connect with NSBE
- Support network with role models and mentors from alumni and industry leaders



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