COURSE COMPLETION (OR LACK THEREOF) IMPACTED BY ABRUPT SHIFT TO REMOTE INSTRUCTION
Overview

• About UMass Amherst
• Background
• Study Questions and Investigation
• Implications and Discussion
About UMass - Amherst

• Flagship of the UMass system
• Only public Carnegie highest research university in MA
• Enrollment: 24000~ undergraduates each year over the past four years
• Highly residential campus in normal academic years (over 60% live on campus)
• Over 50 academic departments, over 100 undergraduate majors
Background - COVID Affected Instruction Policies

Before the outbreak of Covid-19 in Spring 2020
• Most lecture sections were face-to-face (F2F). (94% in Fall 2019)
• Undergraduate students may elect the Pass/Fail (P/F) option before the W-drop date for one course.

Fall 2020
• The majority of lectures (93%) were remote instruction.
• Students were allowed to select P/F for up to three courses.

Fall 2021
• Students returned to F2F class for 95% of lectures.
• The P/F option was back to only one course.
DFW Rate: Number of students receiving a grade of D+, D, F or W divided by the total number of students. Lower DFW rate = better course completion rate

DFW rates dropped in Fall 2020 and rebounded in Fall 2021.
Q1: What contributed to the better course completion in Fall 2020 (compared to pre-pandemic)?

- Instructors made huge efforts including changing their teaching styles, adjusting assessment structures and providing more support to students. – Example followed later.

- Students had more flexible options to avoid failure in more courses. Potential D => P
Instructors’ response to challenges – An Example

- Calculus is an essential course for STEM students success.
- New measures put in to help students feel empowered to finish the assigned work.
- Low stake assessment structure to prevent anxiety and fear.
- Regular opportunities for peer interaction (study groups)
How did students’ choices influence course completion in Fall 2020?

- What courses were more likely to be elected as P/F? (STEM)
- The relationship between DFW rates and P/F election
- Analyses are supposed to be at course-level to inform deans and chairs.

Avg. DFW rates: P/F > Not P/F

Legend size = Enrollment

Campus general: 29% in Fall 2020, around 2% in normal academic years
Did increased P/F election reduce D and W respectively?

- D was reduced significantly but W was not affected much.
- Students who thought they would fail were more likely to choose P/F. More Fs compensated disappearing Ds for the DFW rate in the P/F group.
Lower Level and Large classes have more enrollments so their trends are closer to the general pattern. Those courses also have higher DFW rates.
Q2: What caused worse course completion in Fall 2021 (compared to pre-pandemic)?

- The P/F policy was set back to the pre-pandemic standard.
- Most lectures were taught face-to-face with the option of remote attendances.
- DFW rates were higher than pre-pandemic levels.
Who are struggling the most? By Admit Term and Type

Similar trends across academic levels and cohorts
By School/College

First-year cohorts' DFW rates in Fall 2020

First-year cohorts' DFW rates in Fall 2021

College of Engineering, Social & Behavior Sci and Computer Sci have largest increase in DFW rates from Fall 2020 to Fall 2021.

Passing more courses in Fall 2020 does not mean better preparation for next-level learning – more failure in Fall 2021 as an emerging result of negative impacts by remote learning in Fall 2020.
Does GPA at entry matter to entry-level course completion?

In 100-level courses:

- **First Time**:
  - Avg Prior Institute Converted GPA:
    - Fall 2015: 3.80
    - Fall 2016: 3.79
    - Fall 2017: 3.06
    - Fall 2018: 3.08
    - Fall 2019: 3.86
    - Fall 2020: 3.91
    - Fall 2021: 3.98

- **Transfer**:
  - Avg Prior Institute Converted GPA:
    - Fall 2015: 3.20
    - Fall 2016: 3.28
    - Fall 2017: 3.38
    - Fall 2018: 3.33
    - Fall 2019: 3.36
    - Fall 2020: 3.28
    - Fall 2021: 3.37

Course DFW Rate:

- **Avg. Prior Institute Converted GPA**
- **DFW Rate** In 100-level courses
Impacts on Retention and Graduation

![Graph showing retention and graduation rates for Full Time First Year and Full-Time Transfer students from Fall 2015 to Fall 2021. The graph includes 1-year Retention Rates and 4-year Graduation Rates.]

- 1-year Retention Rates
- 4-year Graduation Rates
Takeaways

• Good course completion rates on paper may be biased.
• Abrupt changes may jeopardize the quality of learning, particularly in STEM courses. Negative impacts may emerge later when students take the next level courses.
• Instructors were able to redesign an even-better-than-before course to overcome the challenge incurred.