



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

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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**.

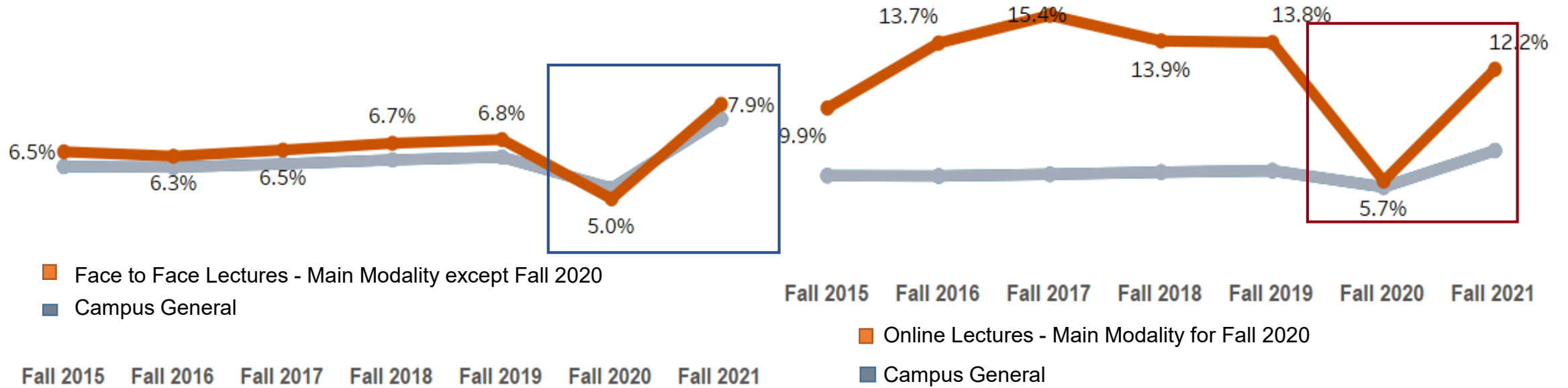
Fall 2020

- 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**.

Influence on Course Completion: DFW Rates

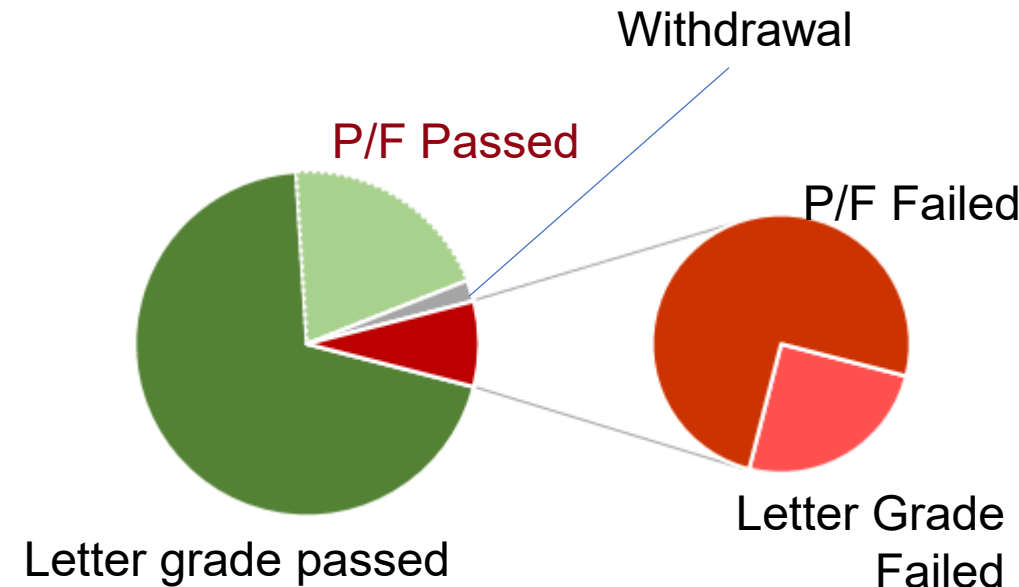


DFW Rate: Number of students receiving a grade of D+, D, F or W divided by the total number of students. Lower DFW rate = better course completion rate

DFW rates dropped in Fall 2020 and rebounded in Fall 2021.

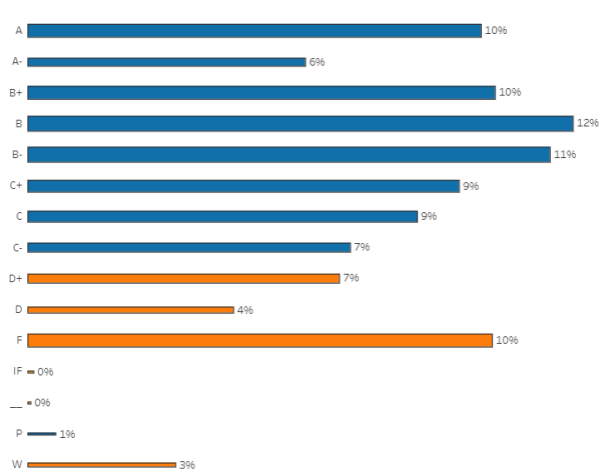
Q1: What contributed to the better course completion in Fall 2020 (compared to pre-pandemic)??

- 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



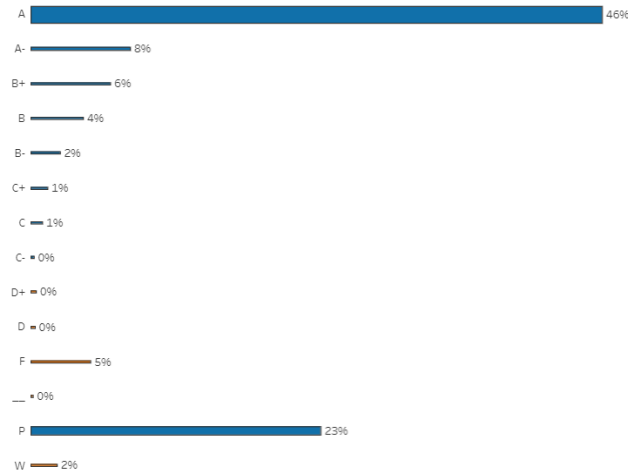
Instructors' response to challenges – An Example

- 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)

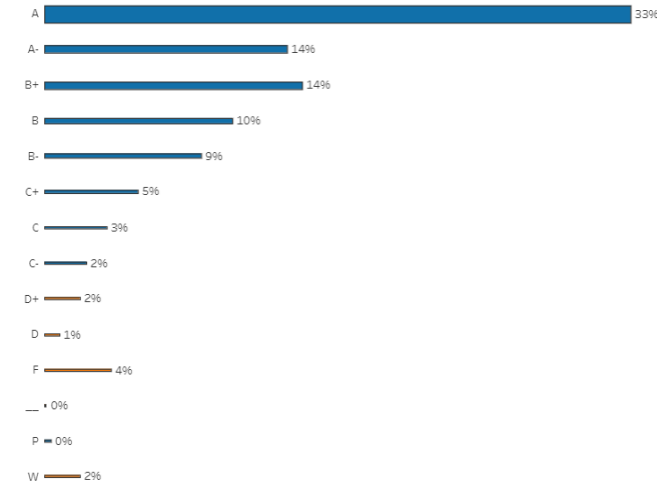


Math 127

Fall 2019



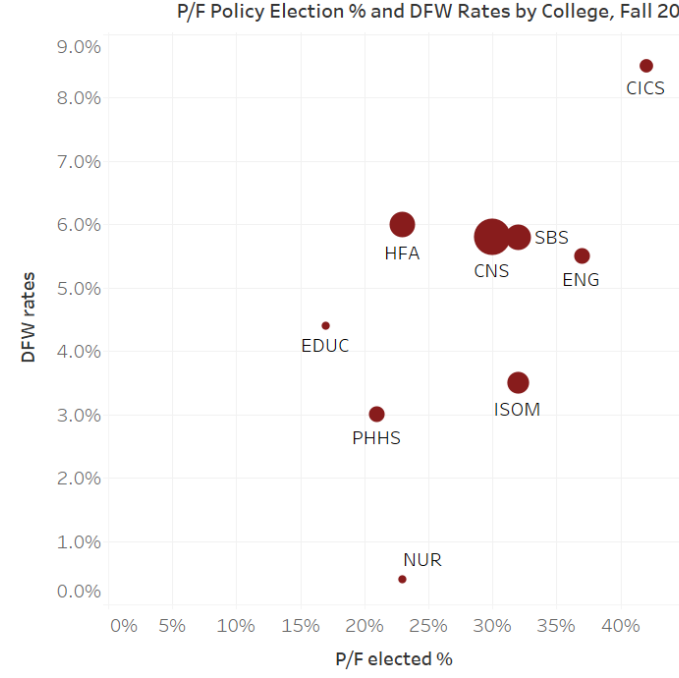
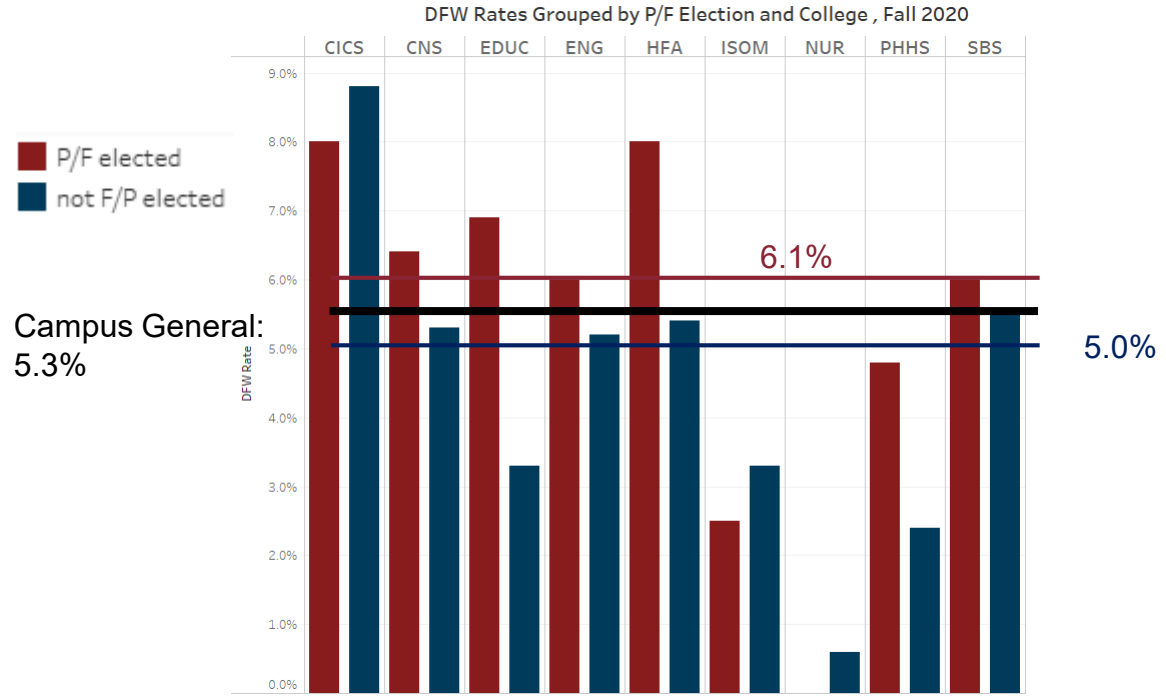
Fall 2020



Fall 2021

How did students' choices influence course completion in Fall 2020?

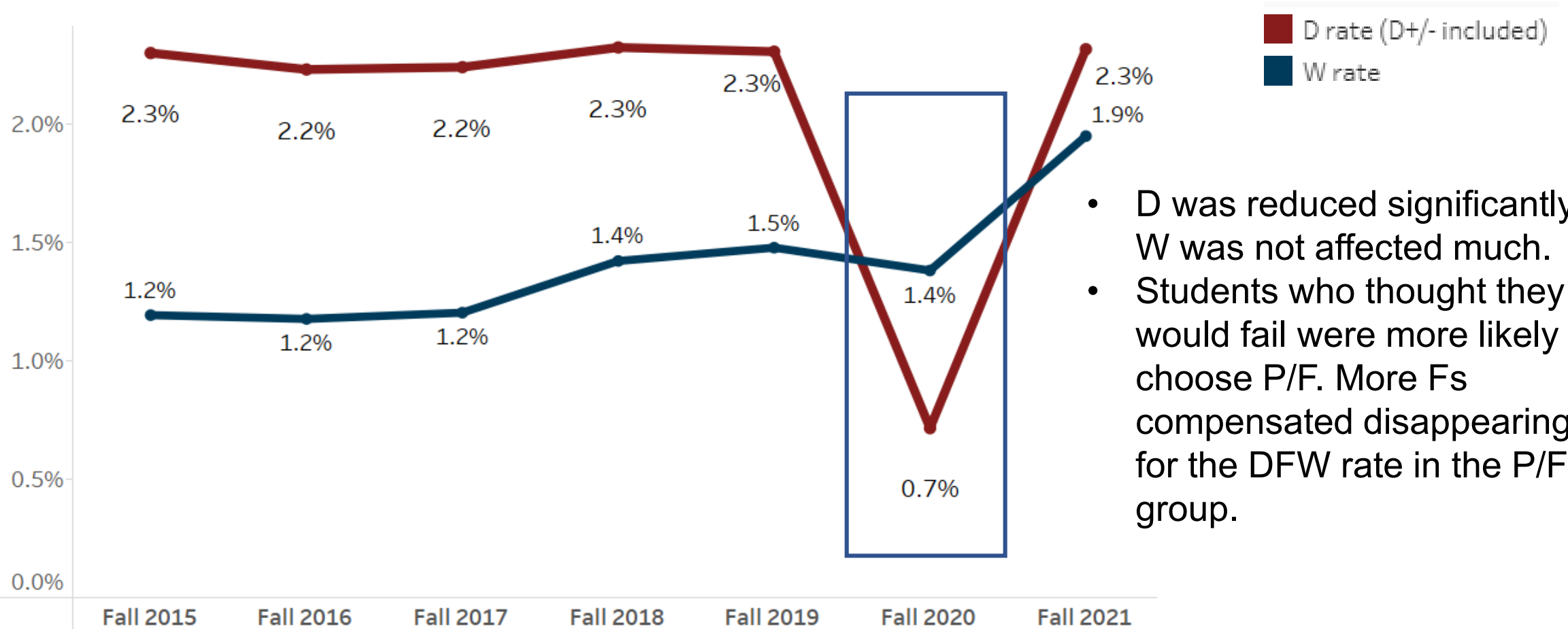
- What courses were more likely to be elected as P/F? (STEM)
- The relationship between DFW rates and P/F election **Avg. DFW rates: P/F > Not P/F**
- Analyses are supposed to be at course-level to inform deans and chairs.



Legend size = Enrollment

Campus general: 29% in Fall 2020, around 2% in normal academic years

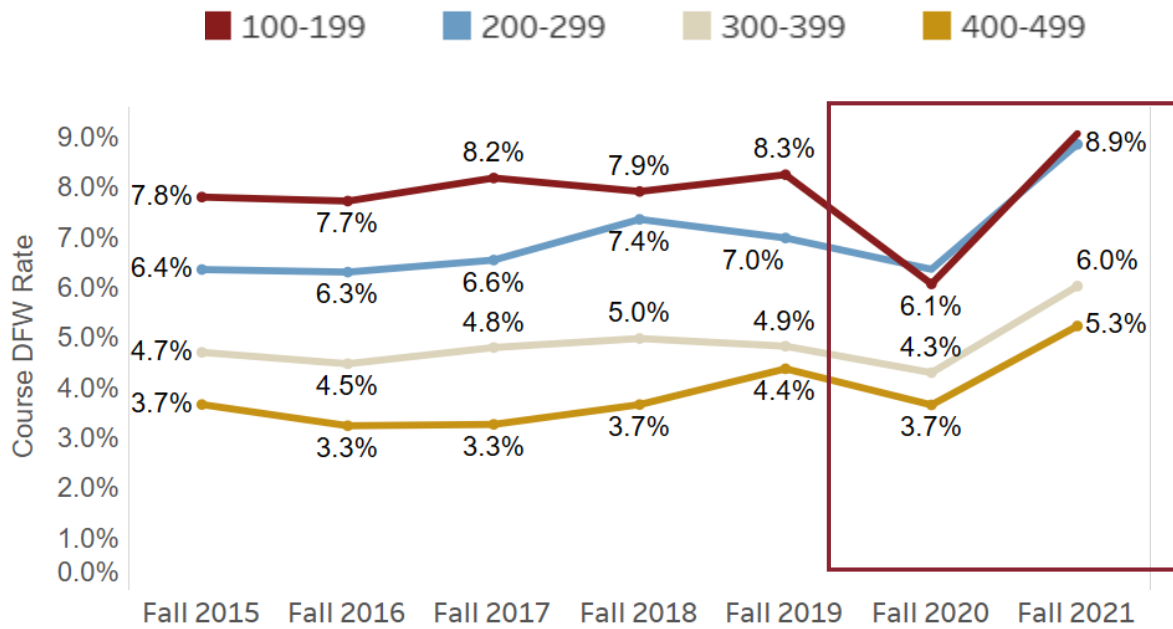
Did increased P/F election reduce D and W respectively?



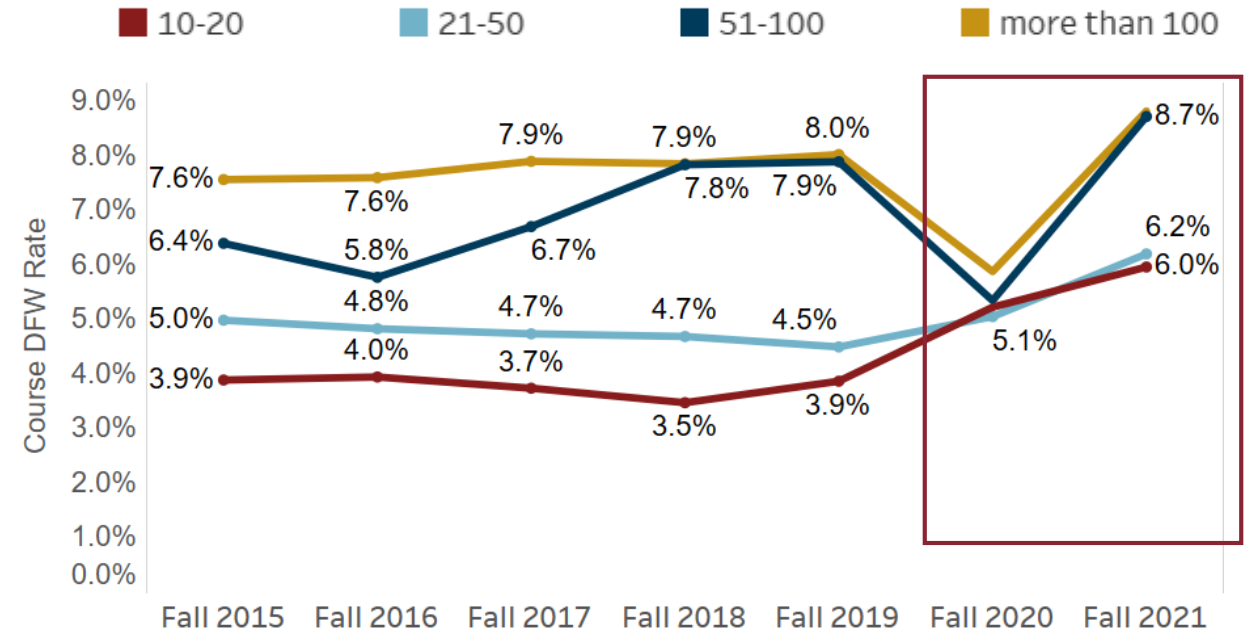
- D was reduced significantly but W was not affected much.
- Students who thought they would fail were more likely to choose P/F. More Fs compensated disappearing Ds for the DFW rate in the P/F group.

Other Course Characteristics

DFW by Course Levels



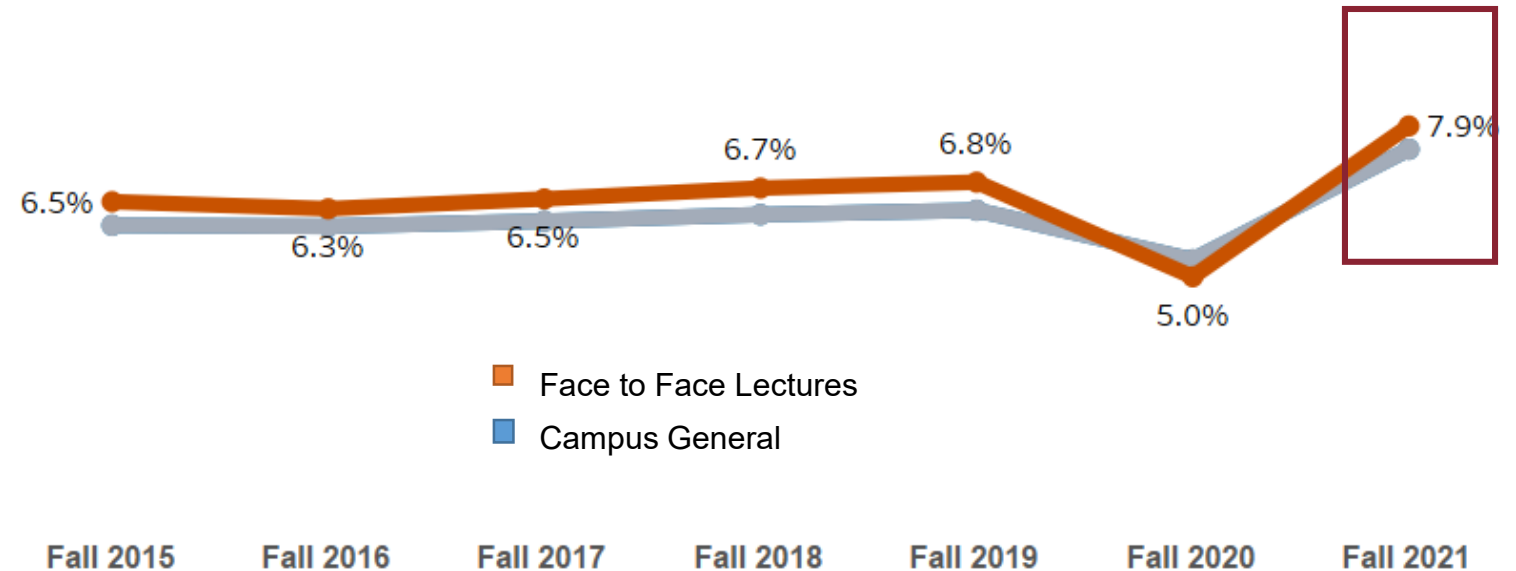
DFW by Class Size



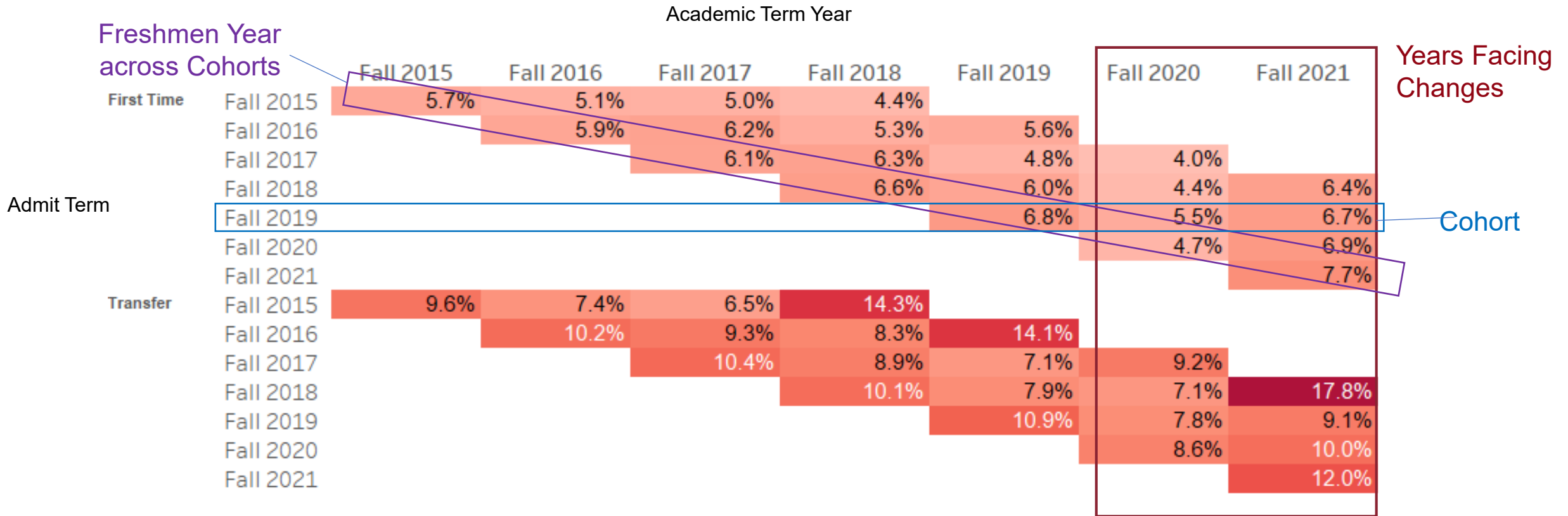
Lower Level and Large classes have more enrollments so their trends are closer to the general pattern. Those courses also have higher DFW rates.

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.



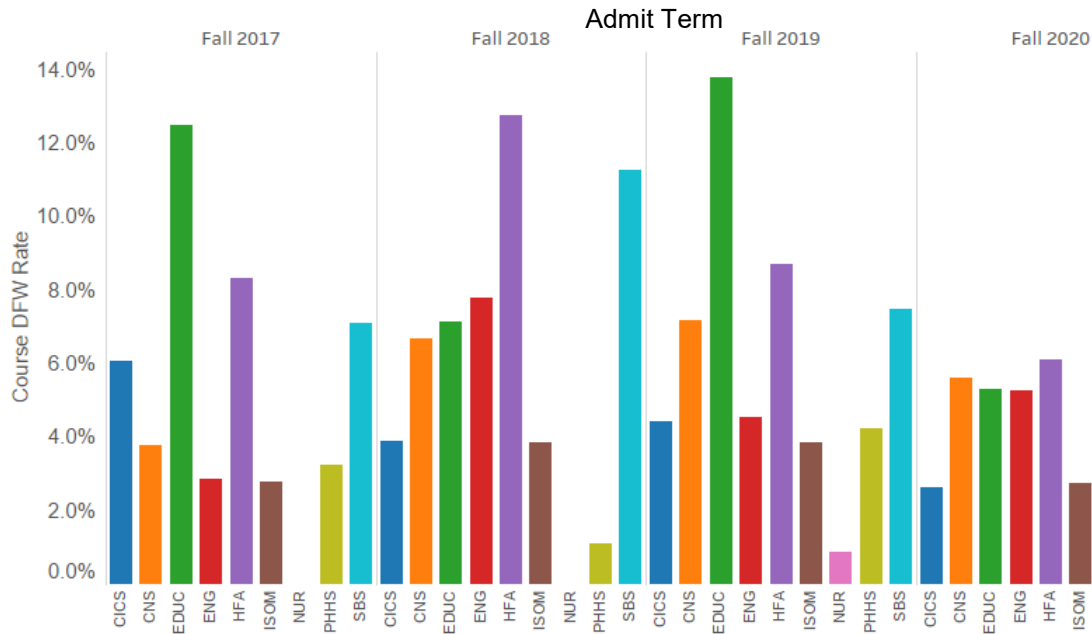
Who are struggling the most? By Admit Term and Type



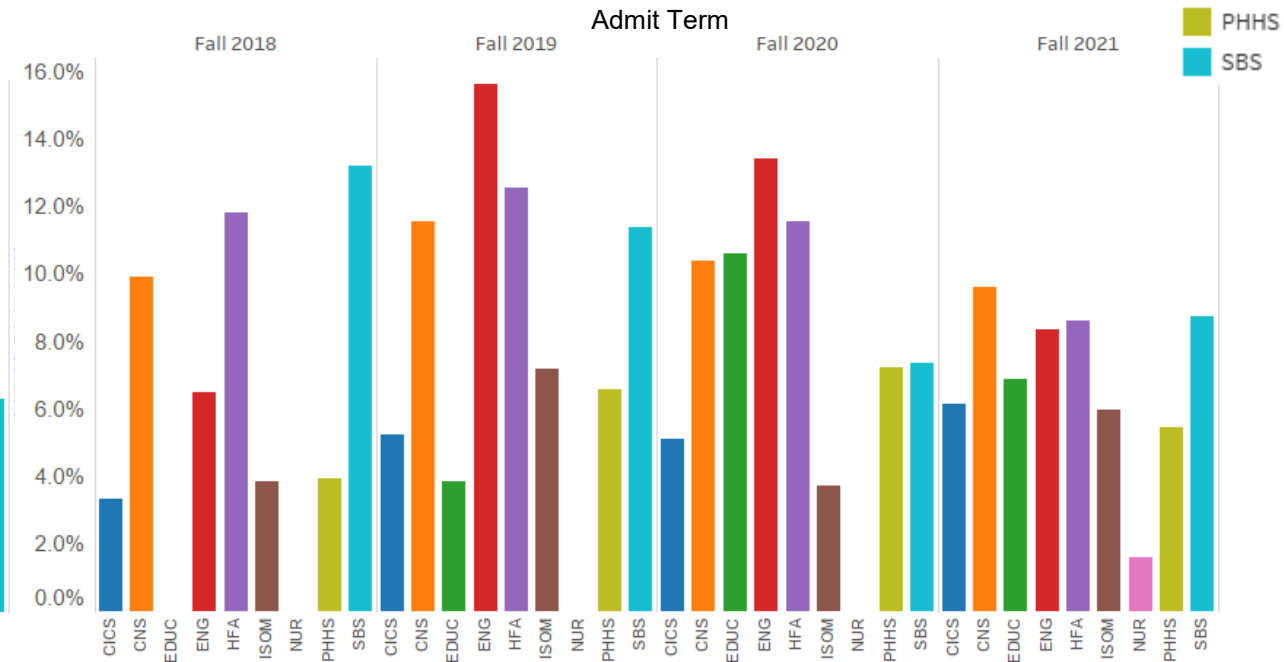
Similar trends across academic levels and cohorts

By School/College

First-year cohorts' DFW rates in Fall 2020



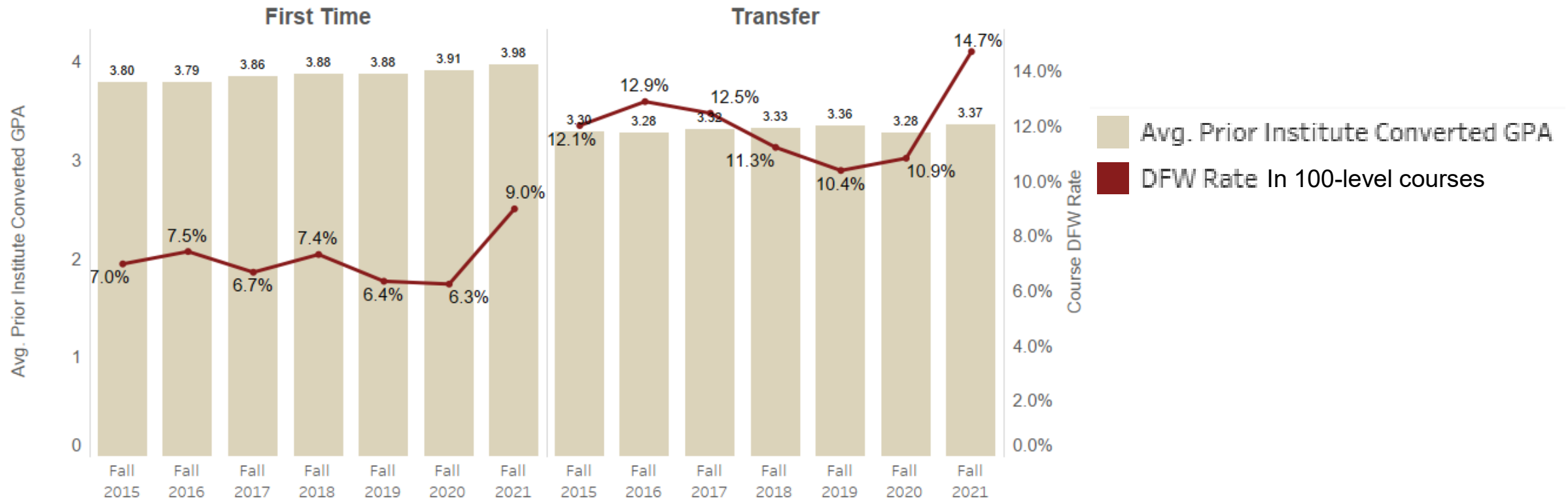
First-year cohorts' DFW rates in Fall 2021



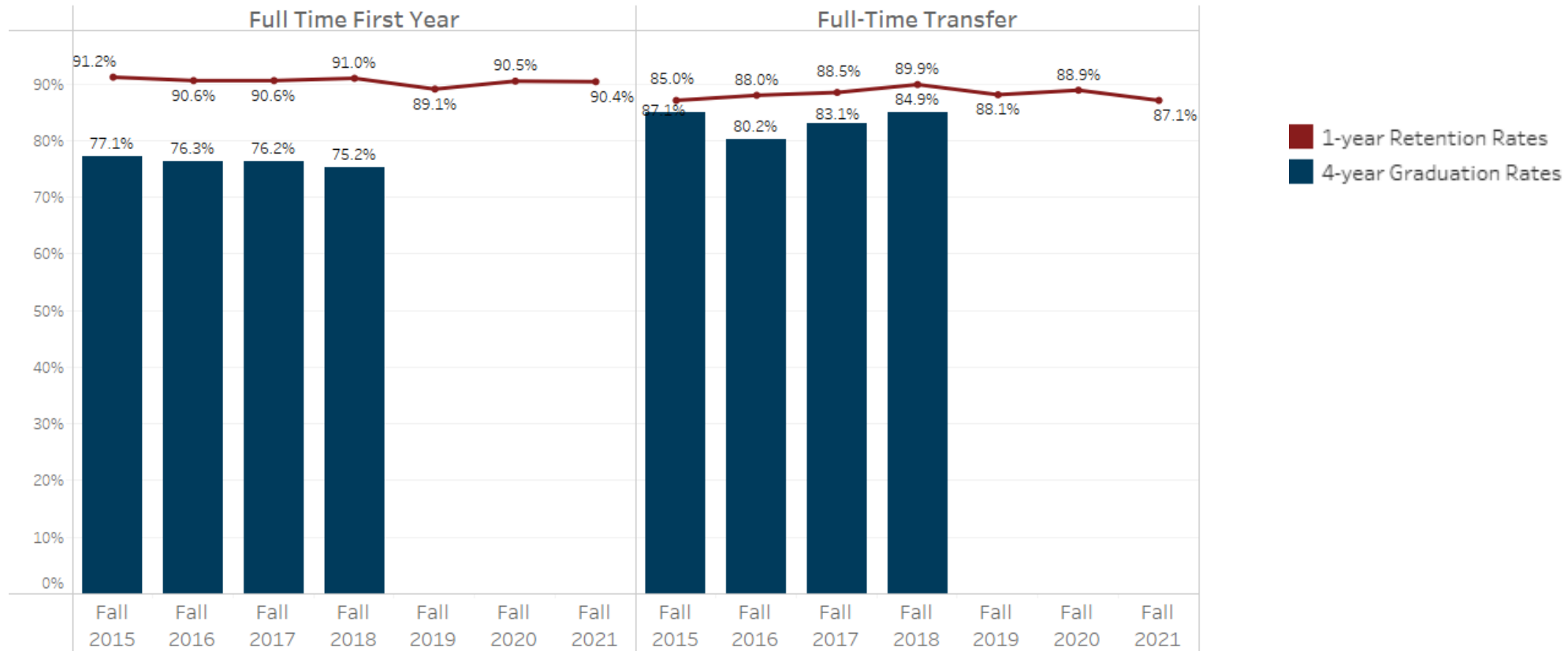
College of Engineering, Social & Behavior Sci and Computer Sci have largest increase in DFW rates from Fall 2020 to Fall 2021.

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?



Impacts on Retention and Graduation



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.

QUESTIONS & ANSWERS

University of
Massachusetts
Amherst
