



## Undergraduate Course DFW Rates Online and Face-to-Face Modality Fall 2023

Please note: the following discussion focuses on descriptive statistics related to populations in courses by delivery modality. **There is no assumption of causality.** The [OIEP DFW Dashboard](#)<sup>1</sup> allows users to explore course DFW rates, including by semester and/or modality.

### SUMMARY

As the number of courses delivered in an online format over the last several years has increased, the question of whether DFW rates are related to course delivery mode became of interest to many on campus. Anecdotal evidence has been offered suggesting that some course DFW rates are being driven by high DFW rates for online sections.

Exploration by OIEP finds that when an undergraduate course was offered in both an online modality (a section or multiple sections) and a face-to-face (F2F) modality (a section or multiple sections), the online section(s) were more likely to have a higher DFW rate. The median difference in a course DFW rate between the online section(s) and the F2F section(s) was 2.6 percentage points.

However, there were large variations at the school/college level regarding the likelihood that a course's online section(s) had a higher DFW rate than its F2F counterpart. Further, there were large variations in the median difference in DFW rates between online and F2F sections. Ergo, caution must be exercised when generalizing the difference in rates. **There is no assumption of causality.**

Finally, as students select the mode of delivery, understanding who is taking courses online as opposed to F2F is critical. Several populations were overrepresented in online courses, including females, Pell-eligible, under-represented minorities (URM), first-generation, part-time, in-state, and older students. However, cumulative GPA was not a differentiating factor, suggesting that academic preparation was not a contributing factor to higher DFW rates in on-line courses.

More detail is provided below.

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<sup>1</sup> Links to OIEP dashboards and data visualizations require being on Mason's VPN or on-campus network.

## DFW RATE BY MODALITY

In the Fall 2023 semester, Mason offered:

- 1,680 distinct undergraduate courses.
- 339 (20.2%) had both F2F and online sections.
  - Over 60% of the courses had online section(s) with higher DFW rates compared to F2F section(s). In other words, the odds of the online section(s) having a higher DFW rate than the F2F section(s) were 1.7:1 [i.e., for every 1.7 courses with a higher online DFW rate, there was only one course with a higher face-to-face DFW rate].

However, the school/college level pattern is not consistent.

- For both CPH and CEC there was no difference in the odds of a course’s online section(s) having a higher DFW rate than the corresponding F2F section(s).
- For CEHD, on the other hand, the odds of a course’s online section(s) having a higher DFW rate than the corresponding F2F section(s) were 9:1 (i.e., for every nine courses with a higher online DFW rate, there was only one course with a higher face-to-face DFW rate).
- The number of observations for some schools/colleges is low, making generalizability ill-advised.

See Table 1 below for more detail.

**Table 1.** Undergraduate Courses Offered in Online and Face-to-Face Sections: DFW Rate Comparison

	COURSES (N)	ONLINE DFW RATE > FACE- TO-FACE DFW RATE (N)	ODDS	FACE-TO- FACE DFW RATE > ONLINE DFW RATE	ODDS	FACE-TO- FACE DFW RATE = ONLINE DFW RATE	ODDS
University Total	339	205	1.7	120	0.6	14	0.0
Carter School	4	3	3.0	1	0.3	0	0.0
College of Visual and Performing Arts	35	24	2.7	9	0.4	2	0.0
College of Public Health	12	5	1.0	5	1.0	2	0.0
College of Science	55	30	1.4	21	0.7	4	0.0
College of Education and Human Development	11	9	9.0	1	0.1	1	0.0
College of Engineering and Computing	37	18	1.0	18	1.0	1	0.0
College of Humanities and Social Sciences	112	75	2.0	37	0.5	0	0.0
Schar School	12	7	1.8	4	0.6	1	0.0
Costello College of Business	47	26	1.4	19	0.7	2	0.0
University (Provost)	14	8	1.6	5	0.6	1	0.0

## Online Asynchronous and Synchronous

Of the 339 courses offered both F2F and online:

- 212 (63%) provided online instruction in an asynchronous format.
- 83(24%) provided online instruction in a synchronous format.
- 44 (13%) provided instruction in both online formats as well as F2F.
- Both methods of online delivery (synchronous and asynchronous) were similarly likely to have a higher DFW rate in comparison to face-to-face delivery.

### *Online Asynchronous (Table 2)*

When a course was offered in both an online asynchronous section(s) and face-to-face section(s):

- The odds that the asynchronous section(s) had a higher DFW rate than the F2F section(s) were 1.7:1.
- Odds varied at the school/college level, ranging from 1:1 in for CPH to infinity (100% probability of asynchronous having higher DFW rate than F2F) for CEHD.

### *Online Synchronous (Table 3)*

When a course was offered in both a synchronous section(s) and a face-to-face section(s):

- The odds that the synchronous section(s) had a higher DFW rate than its face-to-face section(s) were also 1.7:1.
- Odds ranged at the school/college level from infinity (0% probability of synchronous section(s) having higher DFW rate) for CPH to infinity (100% probability of synchronous section(s) having higher DFW rate) for the Carter School.

**Table 2.** Undergraduate Courses Offered in Online Asynchronous and Face-to-Face Sections: DFW Rate Comparison

	COURSES (N)	ONLINE ASYNCHRONOUS DFW RATE > FACE-TO-FACE DFW RATE	ODDS	FACE-TO-FACE DFW % > ONLINE ASYNCHRONOUS DFW RATE	ODDS	FACE-TO-FACE DFW RATE = ONLINE ASYNCHRONOUS DFW RATE	ODDS
University Total	256	156	1.7	92	0.6	8	0.0
Carter School	2	1	1.0	1	1.0	0	0.0
College of Visual and Performing Arts	21	13	1.9	7	0.5	1	0.1
College of Public Health	12	5	1.0	5	1.0	2	0.2
College of Science	31	16	1.2	13	0.8	2	0.1
College of Education and Human Development	8	7	N/A	0	0.0	1	0.1
College of Engineering and Computing	33	17	1.1	16	0.9	0	0.0
College of Humanities and Social Sciences	95	65	2.2	30	0.5	0	0.0
Schar School	5	3	1.5	2	0.7	0	0.0
Costello College Of Business	46	26	1.4	18	0.7	2	0.0
University (Provost)	3	3	N/A	0	0.0	0	0.0

**Table 3.** Undergraduate Courses Offered in Online Synchronous and Face-to-Face Sections: DFW Rate Comparison

	COURSES (N)	ONLINE SYNCHRONOUS DFW RATE > FACE-TO-FACE DFW RATE	ODDS	FACE-TO-FACE DFW % > ONLINE SYNCHRONOUS DFW RATE	ODDS	FACE-TO-FACE DFW RATE = ONLINE SYNCHRONOUS DFW RATE	ODDS
University Total	127	75	1.7	45	0.6	7	0.1
Carter School	2	2	N/A	0	0.0	0	0.0
College of Visual and Performing Arts	18	15	7.5	2	0.1	1	0.1
College of Public Health	1	0	0.0	1	N/A	0	0.0
College of Science	30	18	2.0	9	0.5	3	0.1
College of Education and Human Development	4	3	3	1	0.3	0	0.0
College of Engineering and Computing	10	3	0.5	6	2.0	1	0.1
College of Humanities and Social Sciences	38	22	1.4	16	0.7	0	0.0
Schar School	8	4	1.3	3	0.8	1	0.1
Costello College Of Business	4	2	1.0	2	1.0	0	0.0
University (Provost)	12	6	1.2	5	0.8	1	0.1

## Magnitude of DFW Percentage Difference by Modality

While it was more likely that the online section(s) of a given course had a higher DFW rate than the face-to-face section(s), the **magnitude of the difference** for any course is also important to consider. These differences in Fall 2023 ranged widely.

- In GAME 390, there was a 40 percentage point difference between the online rate of 40% to a F2F rate of 0%.
- At the other extreme, for AFAM 390, the DFW rate for online was 0% but the F2F rate was 50%.
- The median DFW rate difference was +2.6 percentage points, i.e., for half of all courses, the DFW rate in the online section(s) was 2.6 percentage points or higher than the DFW rate in the face-to-face section(s).

Detailed boxplots visualizing the difference between online vs. F2F DFW rates by school/college are available as [Appendix A](#).

Odds ratios are another useful metric for interpreting these differences. In many cases, the probability of students earning a DFW in a course is low. As a result, small DFW rate differences by modality may appear inconsequential when, in fact, the likelihood of earning a DFW in one modality vs. another may be meaningful. While the median DFW rate difference amongst Fall 2023 courses was +2.6 percentage points, the median odds ratio was 1.47:1, meaning that for half of all courses, students in the online section(s) were at least 1.47 times more likely to earn a DFW than students in the face-to-face section(s).

## Student Characteristics Comparison

The details above are descriptive/not causal. This review does not account for the potential differences in student characteristics between online and face to face sections. Of the 339 courses offered both online and F2F, the enrollment profile of the students in the online section(s) compared to the F2F sections were more likely to be:

- Female
- Pell-eligible
- URM
- First-generation
- Part-time
- In-state
- Slightly older

However, there was no substantive difference in cumulative GPA. *\*Cumulative GPA calculated for students in all courses except 100 level where the majority of students had no cumulative GPA due to the Fall 2023 semester being their first at Mason. For 100 level courses, high school GPA was used instead of cumulative GPA.*

Detailed boxplots visualizing the difference in student characteristics by modality for each school/college are available as [Appendix B](#).