



# Research Brief #141

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## Proportion of “W”s in Fall 2016 courses

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At the request of the Institutional Effectiveness and Inclusive Excellence steering committee, the Office of Institutional Research, Planning and Institutional Effectiveness used course grade data for courses in fall 2016 to examine the proportion of Ws earned across all courses and disaggregated by course.

The purpose of this analysis is to determine the rate at which students withdraw from a given course to inform retention efforts and policies. This emerged from discussions surrounding efforts to increase overall completion rates among students and the implications that W/FWs have on student transcripts/ GPAs and subsequently completion.

The following research questions guided this analysis:

- What proportion of all course grades earned are Ws or FWs?
- What proportion of course grades earned are Ws or FWs disaggregated by course?
- What were the total number of units enrolled for students who earned Ws or FWs?
- What was the distribution of Ws or FWs by course length?
- Is there disproportionate impact in rates of Ws or FWs earned by race/ethnicity?

### Method

To conduct the analyses the usx file for fall 2016 was limited to non-instructional service agreement students, credit courses and course enrollments not graded as pass/no-pass. A total of 47,499 student grade records were analyzed. Grades were grouped as: A/B/C, D/F, W/FW, and Other. Since, an FW is assigned when a student has earned an F due to absence /dis-engagement from the course, FWs were grouped together with Ws.

### Results

In fall 2016, of all grades earned (n=47,499), a total 6,647 grades of W/FW (14%) were assigned in fall 2016. Among all students (n=17,192), a total of 4,738 students (27.6%) received a W/FW in at least one course.

Table 1 Fall 2016 Grade Distribution for all Courses

		A/B/C	D/F	W/FW	Other (Incomplete etc.)	Total
	N	34,584	3,650	6,647	2,618	<b>47,499</b>
All course grades	%	72.8%	7.7%	14.0%	5.5%	100%

### Units Enrolled

Total number of units enrolled in the fall 2016 term was examined for students who received an A/B/C in all of their courses, students who received a D/F in at least one course and students who received W/FW in at least one course (Table 2). A one-way analysis of variance test indicated

statistically significant differences in units enrolled between the grade groups ( $F=173.19, p<.05$ ). Students receiving a W/FW in at least one course had higher mean and median sum units with a difference on average of 1 unit more for the W/FW group.

Table 2 Fall 2016 Units Enrolled: Median and Mean by Grade group. \*Those who received "Incompletes etc." were not included in this comparison.

All students	Grade Earned	Median	Mean Units enrolled	Std. Dev.	N
	A/B/C/	9	8.77	4.14	10,605
	D/F	9	9.28	3.94	1,640
	W/FW	10	9.83	4.02	4,738

### Proportion of W/FWs by Course Duration

Course length was examined to determine whether the number of weeks that a course is held has an effect on the proportion of W/FWs (presented in Table 3). The proportion of W/FWs increases as the number of weeks increase. Particularly, differences in proportions of W/FWs are statistically significant ( $\chi^2(3) = 19.01; p < .05$ ) between 16-week courses and courses that are shorter in duration. The percentage of W/FWs for 4-6 week courses was 10.6% compared to 14.5% for 16-week courses.

Table 3 Length of course by proportion of W/FWs in Fall 2016

All courses	Length of Course	Total N	W/FW %
	4-6 weeks	753	10.6%
	7-8 weeks	4932	12.5%
	9-15 weeks	396	12.4%
	16 weeks	41,374	14.3%

### Proportion of W/FWs by Course Name

Table 4 provides a list of 20 courses with a minimum enrollment of 40 or higher that had the highest proportion (24% or more) of W/FWs. COUNS-142 was ranked as #1 with 21 students out of a total 53 receiving W/FWs. As a course with one of the highest enrollments ( $n=1,047$ ), Math-070 ranked 2<sup>nd</sup> in proportions of W/FWs (34%).

Table 4 Top 20 courses with high proportions of W/FWs in fall 2016. See Appendix for complete list of rankings

Rank	Course	W/FW	Total Enrolled
#1	COUNS-142	39.6%	53
#2	MATH-070	33.6%	1047
#3	SOCI-105	32.3%	65
#4	SOCI-230	31.4%	51
#5	BIOSCI-201	31.0%	100
#6	COMS-260	30.6%	62
#7	HLHSCI-151	29.9%	137
#8	KPEA-103	28.4%	67
#9	PHILOS-230	27.7%	47

Rank	Course	W/FW	Total Enrolled
#10	SIGN-110	27.1%	59
#11	SOCI-207	26.6%	173
#12	GERMAN-101	26.1%	46
#13	CAWT-101	25.5%	51
#14	PHYSIC-110	25.4%	67
#15	FRNCH-101	25.0%	92
#16	COUNS-110	24.9%	261
#17	HUMAN-100	24.7%	77
#18	MATH-212	24.5%	237
#19	BUS-140	24.2%	91
#20	MATH-103	23.7%	249

*Proportion of W/FWs by Race/Ethnicity*

Disproportionate impact analyses were conducted for W/FWs based on race/ethnicities of all students who were enrolled in a course in fall 2016. As one measure of disproportionate impact, the proportionality index indicates disproportionate impact where persons of a certain racial/ethnic group's rates in the outcome are different from the group's representation in the population. Using the threshold of .8 or higher, the measure of proportionality index indicates that African-American/Black and Latino/Hispanic students received a grade of W/FW at a higher rate than their rate of representation in overall enrollments.

Latino/Hispanic students represent 48% of the overall enrollments and 54% of those who received W/FW in at least one course (P.I. = 1.13). African-American/Black students represent 4.7% among enrollments vs. 6.4% among W/FWs (P.I. =1.36).

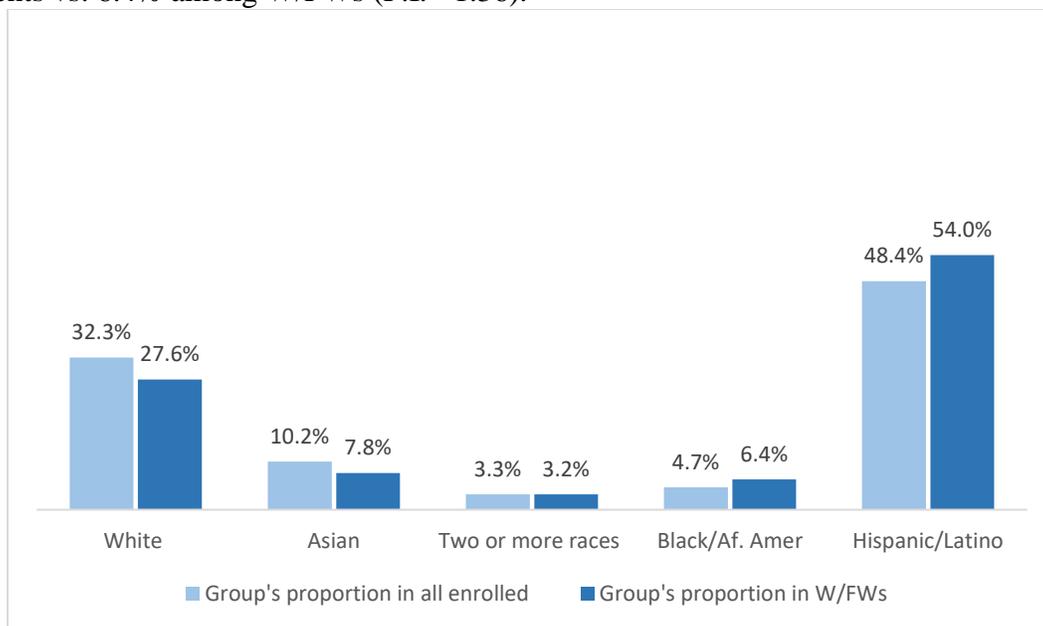


Figure 1 Race/Ethnicity proportions in enrolled vs. in W/FWs

## **Recommendations**

Upon review of the proportion of Ws/FWs, the following recommendations should be taken into consideration:

- Investigate reasons for the high proportion of Ws and FWs in courses identified in the top 20 list and explore strategies for lowering the rates of W/FWs.
- Consider wider promotion of the implication of W/FWs on student transcript and GPAs.
- Consider high impact practices to address disproportionate impact in race/ethnicity sub-groups for W/FWs.

For more detailed information on this research brief, stop by the Institutional Research, Planning, and Institutional Effectiveness office located in BONH-224, or contact Preeta Saxena, Senior Research Analyst at 661.362.3072, or Daylene Meuschke, Dean of Institutional Research, Planning and Institutional Effectiveness at 661.362.5329.

**APPENDIX: Proportions of W/FWs in Fall 2016 courses, ranked #21 and higher**

<b>Rank</b>	<b>Course</b>	<b>W/FW</b>	<b>Total</b>		<b>Rank</b>	<b>Course</b>	<b>W/FW</b>	<b>Total</b>
#21	ENGL-089	23.5%	204		#65	MEA-110	16.3%	43
#22	ITAL-101	23.3%	43		#66	HIST-112	16.2%	727
#23	BUS-100	22.6%	402		#67	CHEM-151	16.1%	361
#24	BUS-211	22.3%	278		#68	BUS-201	16.0%	324
#25	THEATR-110	21.9%	96		#69	HIST-120	15.7%	204
#26	GMD-120	21.8%	142		#70	BIOSCI-106	15.4%	259
#27	BIOSCI-204	21.3%	150		#71	DANCE-180	15.3%	59
#28	COUNS-111	21.1%	71		#72	ASTRON-101	15.2%	92
#29	PHOTO-140	20.7%	174		#73	MATH-214	15.2%	66
#30	PHYSIC-220	20.4%	147		#74	BIOSCI-100	15.1%	700
#31	BIOSCI-205	20.4%	103		#75	SOCI-103	15.1%	205
#32	MATH-083	20.3%	172		#76	PHILOS-106	15.1%	239
#33	ECE-129	20.0%	40		#77	HIST-101	14.7%	143
#34	MATH-060	19.6%	571		#78	POLISC-250	14.6%	41
#35	SPAN-101	19.6%	429		#79	ENGL-091	14.6%	1040
#36	MEA-106	19.6%	46		#80	PHILOS-101	14.5%	509
#37	SOCI-137	19.5%	41		#81	ENGL-103	14.4%	1019
#38	CMPSCI-111	19.4%	134		#82	MUSIC-100	14.3%	119
#39	MATH-059	19.3%	140		#83	SIGN-102	14.3%	56
#40	CMPSCI-111L	19.3%	135		#84	CHEM-202	14.2%	120
#41	ENGL-096	19.2%	795		#85	CMPSCI-182L	13.9%	72
#42	COMS-256	19.2%	52		#86	MATH-102	13.9%	404
#43	PHYSIC-101	19.0%	105		#87	MATH-104	13.7%	336
#44	PHOTO-160	19.0%	42		#88	PHILOS-102	13.6%	44
#45	PHOTO-150	19.0%	205		#89	CHEM-201	13.6%	243
#46	ASTRON-100	19.0%	237		#90	ASTRON-102	13.6%	59
#47	ECON-201	18.9%	376		#91	GEOG-102	13.5%	89
#48	HLHSCI-249	18.7%	123		#92	CAWT-116	13.4%	82
#49	SPAN-102	18.4%	76		#93	THEATR-140	13.4%	82
#50	MATH-058	18.3%	481		#94	PSYCH-101	13.4%	1168
#51	MATH-211	18.2%	253		#95	GEOL-101	13.3%	255
#52	CHNESE-101	17.8%	45		#96	BIOSCI-107	13.3%	60
#53	ADMJUS-126	17.5%	63		#97	HIST-102	13.2%	68
#54	BUS-117	17.5%	63		#98	BIOSCI-221	13.2%	144
#55	PSYCH-109	17.4%	138		#99	PSYCH-172	13.1%	359
#56	ENGL-101	17.1%	1784		#100	BUS-202	13.0%	115
#57	HIST-111	17.0%	1329		#101	KPEA-195A	12.8%	47
#58	COUNS-120	16.9%	71		#102	CMPSCI-182	12.7%	71
#59	MATH-240	16.9%	71		#103	BUS-101	12.5%	56
#60	KPET-200	16.7%	90		#104	PSYCH-230	12.5%	56
#61	MUSIC-131	16.7%	48		#105	ANTHRO-101	12.4%	597
#62	SOCI-200	16.4%	225		#106	CINEMA-122	12.3%	65
#63	MATH-213	16.4%	146		#107	HLHSCI-150	12.3%	171
#64	GMD-101	16.4%	73		#108	CULARTS-055	12.1%	58

Rank	Course	W/FW	Total		Rank	Course	W/FW	Total
#109	COMS-105	12.0%	1228		#154	SOCI-250	7.5%	67
#110	MEA-101	11.9%	42		#155	ART-115	7.4%	94
#111	POLISC-150	11.9%	1332		#156	PSYCH-104	7.2%	97
#112	CMPSCI-122	11.7%	60		#157	SIGN-101	7.2%	223
#113	ECON-170	11.6%	95		#158	ADMJUS-135	7.0%	71
#114	BUS-110	11.3%	106		#159	BIOSCI-202	6.9%	72
#115	ADMJUS-110	11.3%	62		#160	ECE-127	6.9%	58
#116	PHILOS-220	11.1%	54		#161	MUSIC-107	6.7%	119
#117	COUNS-150	11.0%	335		#162	ANTHRO-101L	6.3%	207
#118	ECE-101	10.9%	247		#163	KPEA-125	6.1%	49
#119	CINEMA-121	10.8%	93		#164	ESL-080	5.9%	51
#120	PSYCH-240	10.7%	122		#165	CHEM-255	5.6%	72
#121	FIRETC-101	10.6%	66		#166	ECE-125	5.6%	54
#122	ART-111	10.4%	125		#167	ART-110	5.4%	184
#123	GEOL-100	10.4%	77		#168	CAWT-140	5.3%	225
#124	CAWT-074	10.3%	58		#169	DANCE-100	5.3%	225
#125	AUTO-101	10.2%	49		#170	SOCI-108	5.3%	94
#126	MEA-108	10.1%	69		#171	HLHSCI-100	5.2%	865
#127	PSYCH-126	10.1%	69		#172	ART-124B	5.1%	59
#128	ECE-121	10.0%	70		#173	HIST-161	5.0%	100
#129	SOCI-101	9.9%	1004		#174	BUS-126	4.9%	61
#130	ANTHRO-220	9.9%	71		#175	FIRETC-105	4.7%	64
#131	MATH-140	9.8%	1159		#176	CINEMA-123	4.5%	133
#132	MEA-100	9.8%	285		#177	GEOG-101L	4.3%	93
#133	COMS-120	9.8%	102		#178	ECE-130	4.2%	48
#134	ECON-202	9.7%	124		#179	PSYCH-102	4.1%	222
#135	COMS-100	9.7%	62		#180	CINEMA-120	4.0%	422
#136	ENGR-101	9.3%	43		#181	NURSNG-112	4.0%	50
#137	ANTHRO-103	9.0%	301		#182	SOCI-102	3.7%	54
#138	KPET-201	8.8%	68		#183	PHYSIC-221	3.6%	55
#139	MATH-215	8.8%	57		#184	KPEI-270A	3.3%	61
#140	GEOG-101	8.6%	243		#185	KPET-104	3.2%	62
#141	MATH-075	8.6%	443		#186	KPEA-101A	3.1%	65
#142	PSYCH-103	8.4%	95		#187	KPEI-245B	2.4%	42
#143	ADMJUS-101	8.4%	107		#188	ESL-081	2.2%	45
#144	FIRETC-104	8.2%	49		#189	ART-141	2.1%	47
#145	MUSIC-105	8.1%	111		#190	NURSNG-126	2.0%	49
#146	KPEA-107	7.9%	126		#191	KPEA-150A	1.9%	54
#147	HLHSCI-046	7.9%	63		#192	ENGL-094	1.7%	60
#148	SOCI-210	7.9%	63		#193	MEA-102	1.5%	66
#149	ART-140	7.8%	64		#194	ADMJUS-125	1.4%	73
#150	ART-124A	7.7%	168		#195	COMS-246	1.3%	76
#151	COMS-225	7.7%	91		#196	KPEI-260A	1.0%	99
#152	KPEI-153	7.5%	93					
#153	ESL-100	7.5%	67					