California State University Northridge

Office of Institutional Research

Characteristics of Undergraduate Courses with High Failure Rates

by

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Presentation Prepared for CIELO Panel Discussion

D-U-F Grades in the Learning-Centered University

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Table 1. Percent of High DFU Course Sections* Among All Sections Offered in 2006-07 by GE Status and Course Level

Type of course	Fall 2006 % DFU	Fall 2006 # of sec	Spring 2007 % DFU	Spring 2007 # of sec
All Courses	9.5	3,965	9.5	3,923
GE Status				
General Education Courses	16.1	1,512	15.9	1,436
Other Courses	5.5	2,453	5.8	2,487
Course Level				
Lower Division	14.7	1,870	15.1	1,681
Upper Division	4.9	2,095	5.4	2,242
GE Status and Course Level				
General Education Courses				
Lower Division	18.4	1,153	18.6	1,054
Upper Division	8.6	359	8.4	382
Other Courses				
Lower Division	8.6	717	9.1	627
Upper Division	4.1	1,736	4.7	1,860

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Table 2. Percent of High DFU Course Sections* Among All Sections Offered in 2006-07 by GE Status, Course Level, and College

College	General Education Courses						Other Courses						*All Courses*	
	Lower Division		Upper Division		Total		Lower Division		Upper Division		Total			
	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec
Fall 2006														
Arts, Media, and Communication	12.9	140	3.4	58	10.1	198	1.6	127	0.7	278	1.0	405	4.0	603
Business & Economics	52.2	23	57.1	14	54.1	37	35.4	48	6.8	221	11.9	269	17.0	306
Education	--		--		--		4.5	22	2.2	92	2.6	114	2.6	114
Engineering and Computer Science	15.0	40	0.0	3	14.0	43	18.9	74	8.7	126	12.5	200	12.8	243
Health & Human Development	3.5	115	4.2	48	3.7	163	2.1	94	1.9	313	2.0	407	2.5	570
Humanities	8.6	359	7.0	114	8.2	473	0.0	109	1.4	211	0.9	320	5.3	793
Science and Mathematics	36.9	274	26.7	15	36.3	289	14.8	169	12.5	160	13.7	329	24.3	618
Social & Behavioral Sciences	22.8	171	6.5	107	16.5	278	2.7	37	3.9	334	3.8	371	9.2	649
Total	18.4	1,153	8.6	359	16.1	1,512	8.6	717	4.1	1,736	5.5	2,453	9.5	3,965
Spring 2007														
Arts, Media, and Communication	6.0	133	5.0	60	5.7	193	3.3	123	2.1	336	2.4	459	3.4	652
Business & Economics	38.1	21	41.7	12	39.4	33	32.6	43	6.4	236	10.4	279	13.5	312
Education	--		--		--			20		95		115		115
Engineering and Computer Science	25.7	35	0.0	6	22.0	41	13.3	75	10.4	125	11.5	200	13.3	241
Health & Human Development	4.4	113	1.9	52	3.6	165	6.1	98	2.1	341	3.0	439	3.1	604
Humanities	11.6	335	8.0	113	10.7	448	0.0	64	4.0	202	3.0	266	7.8	714
Science and Mathematics	33.5	260	16.7	18	32.4	278	15.1	146	11.8	170	13.3	316	22.2	594
Social & Behavioral Sciences	25.7	152	9.1	121	18.3	273	4.2	24	4.2	354	4.2	378	10.1	651
Total	18.6	1,054	8.4	382	15.9	1,436	9.1	627	4.7	1,860	5.8	2,487	9.5	3,923

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Table 3. Percent of High DFU Course Sections* Among All Sections Offered in 2006-07 by GE Status, Course Level, and Departments within the Three Colleges with the Highest Percentage of High DUF Course Sections

College	General Education Courses						Other Courses						*All Courses*	
	Lower Division		Upper Division		Total		Lower Division		Upper Division		Total			
	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec	% DFU	# of sec
Fall 2006														
Science and Mathematics	36.9	274	26.7	15	36.3	289	14.8	169	12.5	160	13.7	329	24.3	618
Mathematics	*63.0*	*81*	*0.0*	*1*	*62.2*	*82*	*21.3*	*80*	*18.9*	*37*	*20.5*	*117*	*37.7*	*199*
Chemistry & Biochemistry	*24.1*	*54*	--		*24.1*	*54*	*50.0*	*4*	*18.0*	*50*	*20.4*	*54*	*22.2*	*108*
Biology	*35.5*	*62*	*75.0*	*4*	*37.9*	*66*	*9.5*	*63*	*6.3*	*64*	*7.9*	*127*	*18.1*	*193*
Business & Economics	52.2	23	57.1	14	54.1	37	35.4	48	6.8	221	11.9	269	17.0	306
Economics	*100.0*	*11*	*57.1*	*14*	*76.0*	*25*	--		*61.5*	*13*	*61.5*	*13*	*71.1*	*38*
Systems & Operations Management	--		--		--	*0*	*50.0*	*10*	*8.3*	*12*	*27.3*	*22*	*27.3*	*22*
Engineering and Computer Science	15.0	40	0.0	3	14.0	43	18.9	74	8.7	126	12.5	200	12.8	243
Computer Science	*16.7*	*36*	*0.0*	*1*	*16.2*	*37*	*32.1*	*28*	*5.0*	*20*	*20.8*	*48*	*18.8*	*85*
Civil Engineering & Applied Mechanics	--		--		--	*0*	*33.3*	*9*	*6.3*	*32*	*12.2*	*41*	*12.2*	*41*
Total	18.4	1,153	8.6	359	16.1	1,512	8.6	717	4.1	1,736	5.5	2,453	9.5	3,965
Spring 2007														
Science and Mathematics	33.5	260	16.7	18	32.4	278	15.1	146	11.8	170	13.3	316	22.2	594
Mathematics	*73.0*	*74*	*50.0*	*2*	*72.4*	*76*	*26.8*	*56*	*17.9*	*39*	*23.2*	*95*	*45.0*	*171*
Chemistry & Biochemistry	*17.3*	*52*	--		*17.3*	*52*	*40.0*	*5*	*16.4*	*55*	*18.3*	*60*	*17.9*	*112*
Biology	*32.1*	*56*	*33.3*	*3*	*32.2*	*59*	*8.2*	*61*	*4.8*	*63*	*6.5*	*124*	*14.8*	*183*
Business & Economics	38.1	21	41.7	12	39.4	33	32.6	43	6.4	236	10.4	279	13.5	312
Economics	*80.0*	*10*	*41.7*	*12*	*59.1*	*22*	--		*47.1*	*17*	*47.1*	*17*	*53.8*	*39*
Accounting	--		--		--	*0*	*73.3*	*15*	*2.3*	*44*	*20.3*	*59*	*20.3*	*59*
Engineering and Computer Science	25.7	35	0.0	6	22.0	41	13.3	75	10.4	125	11.5	200	13.3	241
Civil Engineering & Applied Mechanics	--		--		--	*0*	*10.0*	*10*	*25.0*	*28*	*21.1*	*38*	*21.1*	*38*
Computer Science	*28.1*	*32*	*0.0*	*2*	*26.5*	*34*	*18.8*	*32*	*4.8*	*21*	*13.2*	*53*	*18.4*	*87*
Total	18.6	1,054	8.4	382	15.9	1,436	9.1	627	4.7	1,860	5.8	2,487	9.5	3,923

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Table 4. Number and Percentage of High DFU Course Sections* by Selected Course Characteristics

Characteristic	Fall 2006 Percent	Fall 2006 Number	Spring 2007 Percent	Spring 2007 Number
Course Level				
Lower Division	72.7	274	67.8	253
Upper Division	27.3	103	32.2	120
Total	100.0	377	100.0	373
GE Status				
General Education course section	64.5	243	61.1	228
Other course section	35.5	134	38.9	145
Total	100.0	377	100.0	373
GE Status and Course Level				
General Education Courses				
Lower Division	56.2	212	52.5	196
Upper Division	8.2	31	8.6	32
Other Courses				
Lower Division	16.4	62	15.3	57
Upper Division	19.1	72	23.6	88
Total	100.0	377	100.0	373
Type of GE Course				
Basic Skills	32.1	78	32.0	73
Mathematics	*21.0*	51	*24.1*	55
Oral Communication	*3.7*	9	*5.3*	12
Critical Thinking	*3.3*	8	*2.6*	6
Expository Writing	*4.1*	10	*0.0*	0
Subject Explorations	65.4	159	64.5	147
Natural Sciences	*26.7*	65	*19.7*	45
Social Sciences	*14.8*	36	*14.9*	34
Comparative Studies & For. Langs.	*8.2*	20	*11.8*	27
Arts & Humanities	*8.6*	21	*9.6*	22
Lifelong Learning	*7.0*	17	*8.3*	19
History & Government	2.5	6	3.5	8
Total	100.0	243	100.0	228

Table 4 cont'd.

Characteristic	Fall 2006 Percent	Fall 2006 Number	Spring 2007 Percent	Spring 2007 Number
College				
Arts, Media, and Communication	6.4	24	5.9	22
Business & Economics	13.8	52	11.3	42
Education	0.8	3	0.8	3
Engineering and Computer Science	8.2	31	8.6	32
Health & Human Development	3.7	14	5.1	19
Humanities	11.2	42	15.1	56
Science and Mathematics	39.9	150	35.5	132
Social & Behavioral Sciences	16.0	60	17.7	66
Total	100.0	376	100.0	372
Size of Class Section				
10 - 19 students	4.5	11	5.7	13
20 - 29 students	24.3	59	28.1	64
30 - 39 students	33.3	81	27.6	63
40 - 49 students	15.6	38	13.2	30
50 - 99 students	18.1	44	16.7	38
100 or more students	4.1	10	8.8	20
Total	100.0	243	100.0	228
Mean section size	39.7		40.5	

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Table 5. Percentage of High DFU Course Sections* in Various Colleges by GE Status, Class Level, and Term

	General Education Courses			Other Courses			All Course Sections	
	Lower Division	Upper Division	Total	Lower Division	Upper Division	Total	Percent	Number
Fall 2006								
Arts, Media, and Communication	75.0	8.3	83.3	8.3	8.3	16.7	100.0	24
Business & Economics	23.1	15.4	38.5	32.7	28.8	61.5	100.0	52
Engineering and Computer Science	19.4	0.0	19.4	45.2	35.5	80.6	100.0	31
Health & Human Development	28.6	14.3	42.9	14.3	42.9	57.1	100.0	14
Humanities	73.8	19.0	92.9	0.0	7.1	7.1	100.0	42
Science and Mathematics	67.3	2.7	70.0	16.7	13.3	30.0	100.0	150
Social & Behavioral Sciences	65.0	11.7	76.7	1.7	21.7	23.3	100.0	60
Total	56.6	8.3	64.9	16.4	18.8	35.1	100.0	373
Spring 2007								
Arts, Media, and Communication	36.4	13.6	50.0	18.2	31.8	50.0	100.0	22
Business & Economics	19.0	11.9	31.0	33.3	35.7	69.0	100.0	42
Engineering and Computer Science	28.1	0.0	28.1	31.3	40.6	71.9	100.0	32
Health & Human Development	26.3	5.3	31.6	31.6	36.8	68.4	100.0	19
Humanities	69.6	16.1	85.7	0.0	14.3	14.3	100.0	56
Science and Mathematics	65.9	2.3	68.2	16.7	15.2	31.8	100.0	132
Social & Behavioral Sciences	59.1	16.7	75.8	1.5	22.7	24.2	100.0	66
Total	52.8	8.7	61.5	15.4	23.0	38.5	100.0	369

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Table 6. Mean Enrollment in High DFU Course Sections* by College and Term

Mean size	Arts, Media & Commun.	Business & Econ.	Engineering & Comp. Sci.	Health & Human Dev.	Humanities	Science & Mathematics	Social & Behav. Sci.
Fall 2006	34.3	55.2	24.9	29.1	27.5	42.1	41.9
Spring 2007	39.6	56.6	21.4	33.4	26.9	41.4	53.0

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Table 7. Departments with High DFU Course Sections* Awarding at Least 100 D, F, or U Grades in Fall 2006 or Spring 2007 by College and Term

Department	Fall 2006 D, F, U grades	Fall 2006 No. of Sections Offered	Spring 2007 D, F, U grades	Spring 2007 No. of Sections Offered
Science and Mathematics				
Mathematics	1,515	75	1,410	77
Biology	591	35	522	27
Chemistry	460	24	399	20
Physics & Astronomy	208	10	98	6
Social and Behavioral Sciences				
Sociology	295	13	230	9
Geography	247	15	215	14
History	160	9	276	11
Anthropology	100	5	149	8
Pan African Studies	148	13	90	9
Political Science	18	2	206	3
Psychology	22	1	171	11
Business and Economics				
Economics	669	27	527	21
Accounting	257	8	298	12
Finance, Real Estate, & Insurance	100	4	173	2
Humanities				
Philosophy	186	15	111	11
English	95	10	172	19
Engineering and Computer Science				
Computer Science	171	16	156	16
Electrical & Computer Engineering	86	10	28	4
Health and Human Development				
Kinesiology	70	7	168	12
Arts, Media, and Communication				
Communication Studies	103	9	32	2

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Table 8. Courses with High DFU Sections* Awarding at Least 110 D, F, or U Grades During the 2006-07 Academic Year by GE Status, Department, and Term

Department and Course	Fall 2006 D, F, U grades	Fall 2006 No. of Sections Offered	Spring 2007 D, F, U grades	Spring 2007 No. of Sections Offered
General Education Courses				
Mathematics				
Math 102 - College Algebra	684	23	377	15
Math 140 - Introductory Statistics	332	17	300	14
Math 103 - Mathematical Methods for Business	27	2	281	13
Math 150A - Calculus I	66	4	70	5
Math 131 - Mathematical Ideas	51	4	77	6
Economics				
Econ 160 - Principles of Microeconomics	300	9	251	5
Econ 161 - Principles of Macroeconomics	108	2	79	3
Econ 310 - Price Theory and Applications	64	4	66	4
Biology				
Biol 100 - Introduction to Biology	210	11	205	10
Biol 106 - Biological Principles and Lab	131	6	76	3
Chemistry and Biochemistry				
Chem 100 - Principles of Chemistry	127	7	80	5
Chem 101 - General Chemistry I	78	4	50	2
Chem 102 - General Chemistry II	49	2	66	2
Geography				
Geog 101 - The Physical Environment	79	5	82	6
Geog 150 - World Geography	68	4	78	4
Geog 103 - Weather	100	6	20	1
History				
Hist 271 - The United States Since 1865	54	3	102	2
Hist 270 - The United States to 1865	71	3	69	2
Other Departments				
Comp 100 - Computers: Their Impact and Use	68	6	110	9
Jour 100 - Mass Communication	51	3	68	3
PolS 155 - American Political Institutions	--	0	206	3
Soc 150 - Introductory Sociology	198	3	100	3
Other Courses				
Accounting				
Acct 220 - Introduction to Financial Accounting	180	5	240	7
Acct 230 - Introduction to Managerial Accounting	66	2	52	4
Mathematics				
Math 104 - Trigonometry and Analytic Geometry	112	6	108	6
Math 150B - Calculus II	74	5	47	4
Chemistry and Biochemistry				
Chem 333 - Organic Chemistry I	68	3	79	3
Chem 334 - Organic Chemistry II	77	3	63	3
Other Departments				
Econ 308 - Economics for Managers	76	5	40	3
Fin 303 - Financial Management	75	2	173	2

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Table 9. Mean Percentage of D, F, or U Grades Awarded in High DUF Course Sections* by Term and Type of GE Course

	Percent U grades	Percent D grades	Percent F Grades	Percent DFU	Number of Sections
Fall 2006					
Basic Skills	10.3%	13.9%	23.0%	47.3%	78
Mathematics	*13.4%*	*13.5%*	*25.1%*	*52.0%*	*51*
Expository Writing	*3.5%*	*10.0%*	*25.3%*	*38.8%*	*10*
Oral Communication	*0.0%*	*17.6%*	*21.0%*	*38.6%*	*9*
Critical Thinking	*10.8%*	*17.8%*	*9.3%*	*37.9%*	*8*
Subject Explorations	5.4%	16.2%	18.4%	40.0%	159
Natural Sciences	*4.5%*	*16.4%*	*18.7%*	*39.6%*	*65*
Social Sciences	*4.5%*	*18.4%*	*19.1%*	*42.0%*	*36*
Arts & Humanities	*6.7%*	*15.4%*	*17.8%*	*39.9%*	*21*
Comparative Studies & For. Langs.	*7.1%*	*14.4%*	*17.1%*	*38.7%*	*20*
Lifelong Learning	*7.2%*	*13.6%*	*17.8%*	*38.7%*	*17*
History & Government	0.4%	17.5%	25.6%	43.4%	6
Total	6.9%	15.5%	20.0%	42.4%	243
Spring 2007					
Basic Skills	10.1%	14.2%	25.5%	49.8%	73
Mathematics	*11.8%*	*16.1%*	*24.7%*	*52.6%*	*55*
Expository Writing	*5.0%*	*8.5%*	*26.4%*	*39.9%*	*12*
Critical Thinking	*4.9%*	*8.3%*	*30.6%*	*43.8%*	*6*
Oral Communication	--	--	--	--	*0*
Subject Explorations	7.6%	14.8%	17.3%	39.6%	147
Natural Sciences	*4.8%*	*14.8%*	*18.2%*	*37.7%*	*45*
Social Sciences	*8.0%*	*18.1%*	*16.0%*	*42.1%*	*34*
Comparative Studies & For. Langs.	*11.1%*	*12.6%*	*14.1%*	*37.8%*	*27*
Arts & Humanities	*8.3%*	*13.4%*	*16.1%*	*37.8%*	*22*
Lifelong Learning	*7.6%*	*13.5%*	*23.4%*	*44.5%*	*19*
History & Government	0.8%	19.7%	21.3%	41.8%	8
Total	8.1%	14.8%	20.0%	43.0%	228

* "High DUF Courses" are those in which 30% or more of the students enrolled in a class received D, F, NC, or U grades.

Figure 1. Mean Percentage of D, F, or U Grades Awarded in High DUF Course Sections by Section Size (Fall 2006)

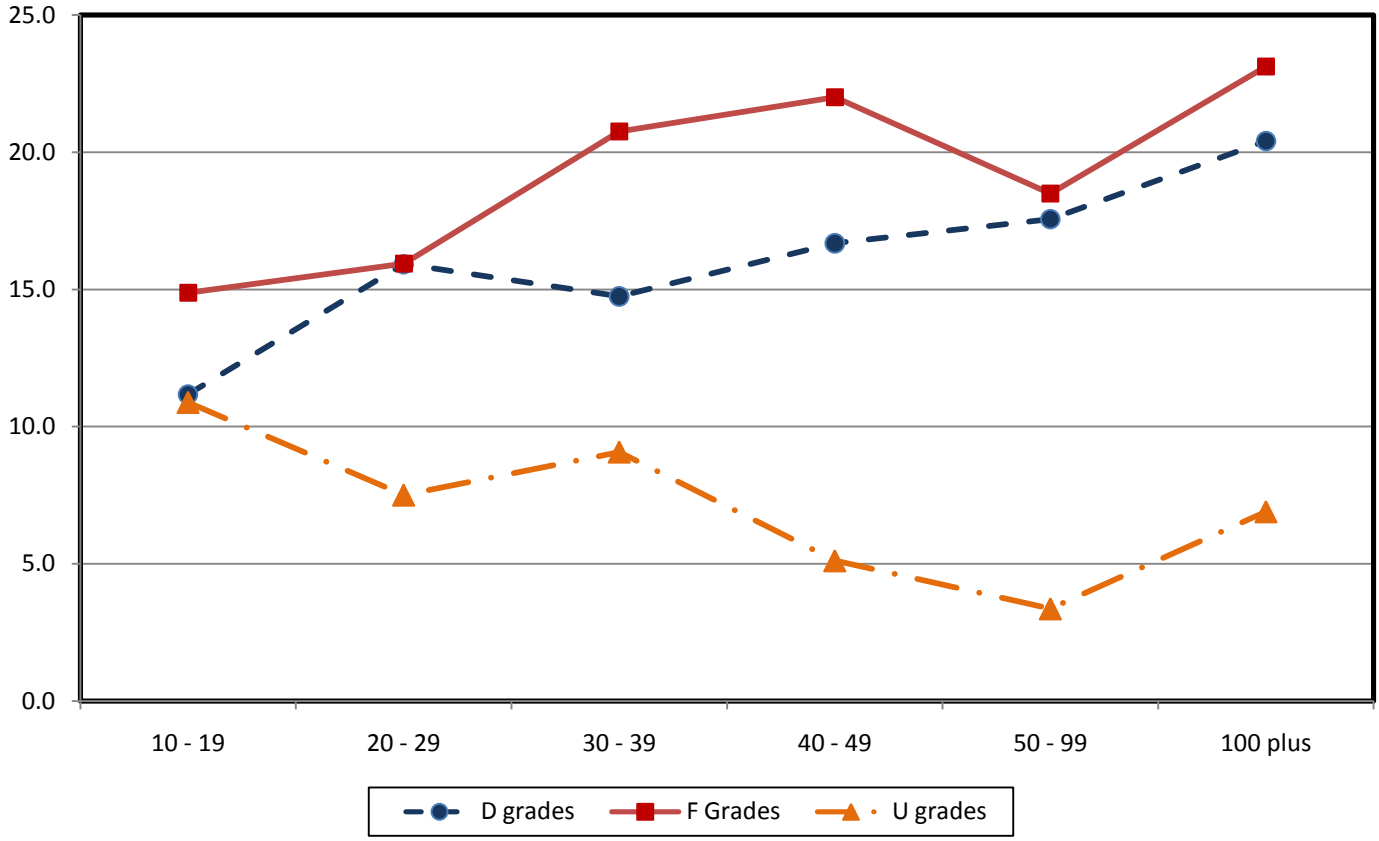
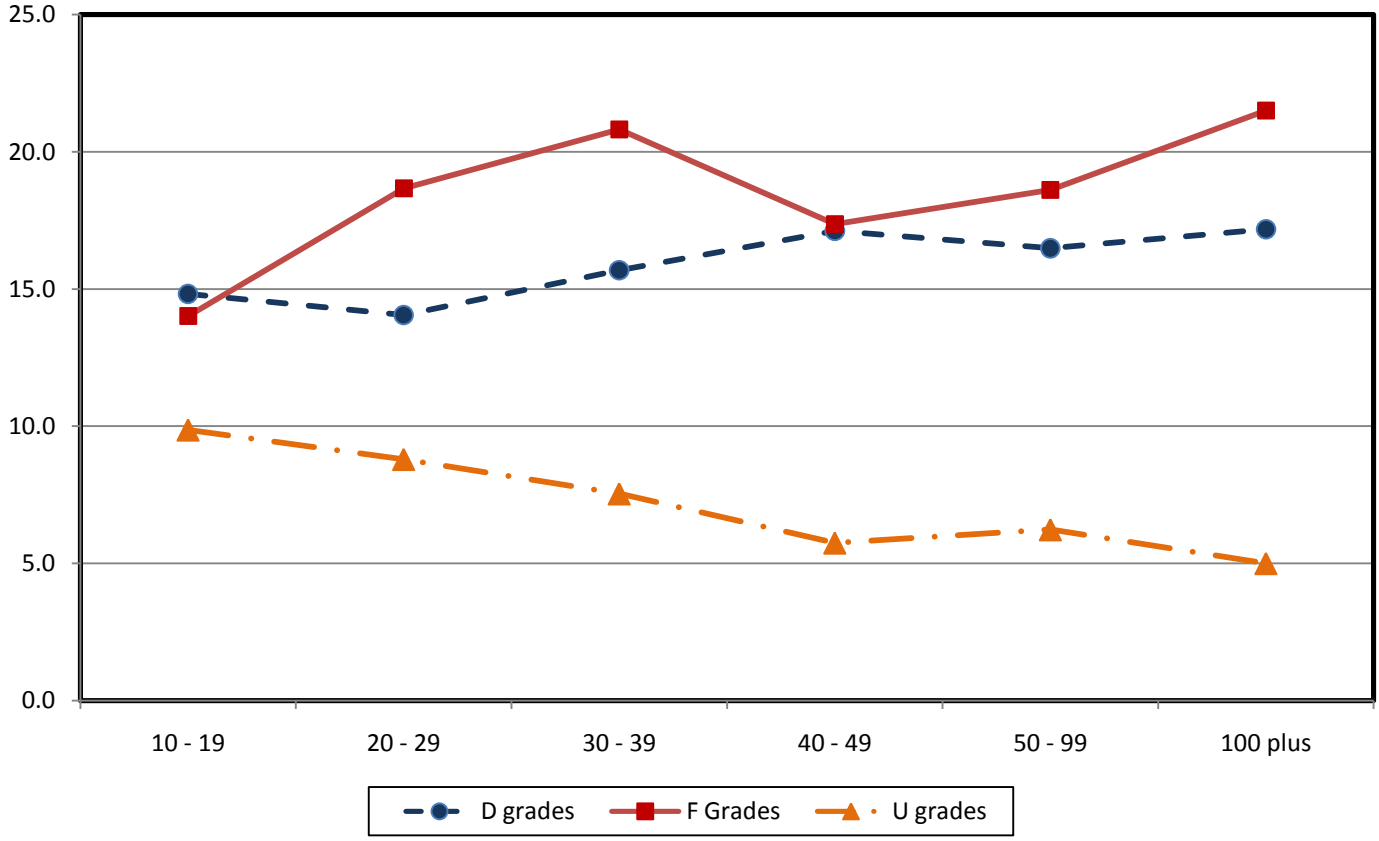
Figure 2. Mean Percentage of D, F, or U Grades Awarded in High DUF Course Sections by Section Size (Spring 2007)