

Study of Grade Point Averages For Juniors and Seniors

**University of Kansas
Lawrence Campus**

Fall 1984 - 2004

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Executive Summary

Calls for greater accountability of student learning are increasingly being heard across the country, including concerns about perceived lenient grading practices within colleges and universities. In response to such concerns, institutions are reexamining their grading practices to look for potential problems and to take proactive steps to address any underlying issues.

The study of grade point averages undertaken at the University of Kansas is a limited analysis that explores changes in GPAs at an aggregate level for undergraduate juniors and seniors between Fall 1984 and Fall 2004. It focuses on GPAs at the university level and the academic unit level and does not include information by individual department or individual student major. The study is an effort to better understand the grading practices at KU and to initiate discussion within the College and schools of the different factors that can influence grades as well as the standards and norms operating, often implicitly, on campus. When examining the results of this analysis, it is important to keep several points in mind.

- **Grade inflation and grade increase are not interchangeable terms.** Grade increase describes an increase in average grades over time and is often misrepresented as indication of grade inflation. Explicit grade inflation specifically refers to the situation in which students with comparable backgrounds and performance received higher grades than their counterparts in previous cohorts from faculty with similar backgrounds.
- **College grading is an exceptionally complex phenomenon.** Student course grades are correlated with factors related to the characteristics of students, faculty, course, discipline, and institution. Understanding changes in grades means examining changes in student and faculty populations, student course-taking patterns, and institutional, disciplinary, and broad social contexts.
- **Grades can be examined at different levels** – including individual course grades, student grade point averages, and institutional grade point averages, among others.

The KU GPA study is not a study of grade inflation and does not compare course level grades for specific groups of students. The analysis is a broad examination of the changes in GPAs over time at an institutional level as well as for the College and schools. The study takes into account a limited number of factors identified by national research as influencing changes in grade patterns over time – specifically gender and ACT scores. It also applies a grading policy from Princeton University that no more than 55 percent of junior/senior course grades awarded by departments should be A's.

Overall, the study found that the average institutional GPA at KU increased during the 20-year period by approximately 0.20 points. Further analysis suggests that one contributing component in the rise of average GPAs at the university level is the concurrent increase in the proportion of women, who on average have higher GPAs than their male counterparts. Application of the Princeton University grading standard indicates that KU was below the 55 percent threshold at an institutional level.

The findings at KU are consistent with national trends. According to a 2005 report by the Association for the Study of Higher Education (Hu, 2005) that systematically examined the issues surrounding grading practices at the national level, empirical evidence indicates that institutional GPAs are trending upward across the country. However, there is only minimal evidence of explicit grade inflation. The forces driving the upward trend in grades are complex and multifaceted as student grades in courses are determined by the characteristics of students, faculty, course, and discipline.

References: Hu, S. (2005). *Beyond Grade Inflation: Grading Problems in Higher Education*. ASHE Higher Education Report: Volume 30, Number 6. Jossey-Bass Higher Education/Adult Education Series.

Description of KU Study

Trends in mean grade point averages were examined between Fall 1984 and Fall 2004 to determine whether there was a significant pattern of aggregate grade increase over time for undergraduate juniors and seniors. Analyses were done at the institution level as well as at the College and school levels.

At both the institutional and the College or school level, GPA averages and frequencies were utilized to examine the changes in average GPA over time. At the institutional level, regression models were created to examine possible contributing factors such as ACT scores, gender, and year of the fall term. Regression models were created for the combination of the three factors as well as separately for each of the three factors - year of the fall term, ACT scores, and gender.

The grade averages were computed for juniors and seniors during the fall semesters in 4-year time intervals, or for the fall terms of 1984, 1988, 1992, 1996, 2000, and 2004.

The study includes two groups of students:

- The regression analyses are based on 39,507 juniors and seniors with available ACT scores (*Regression Sample*).
 - ACT scores range from 6 to 36, with a mean score of 23.98.
 - The proportion of males and females is roughly equal—20,219 males (51%) and 19,288 females (49%).¹
- Averages and frequencies of grades are computed separately for a larger group of 54,624 juniors and seniors.
 - 39,507 juniors/seniors with available ACT scores (*Regression Sample*).
 - 15,117 additional juniors/seniors without available ACT scores.

¹ See Appendix A for full demographics on students.

Regression Results and GPA Averages **Regression Sample**

Regression Analyses

Linear regression techniques are often used to examine the nature and the closeness of a relationship between two or more variables, specifically the extent to which one variable can be predicted by knowing the value of other variables. In this study, regression analysis was used to examine the relationships among a set of variables that previous research has shown to influence GPA averages – specifically, year of the fall term, ACT scores, and gender.

Taken together, the year of the fall term, ACT score, and gender account for roughly 95 percent (Adj $R^2=0.95$) of the variance in mean GPA at the institution level. On average, more recent fall semesters, higher ACT scores, and being a woman are each positively correlated with higher GPA values.

Using the separate models for each of the three factors produced the following results.

- The year of the fall term accounts for approximately 33 percent of the variance in grades.
- ACT scores account for virtually none (less than 10%) of the grade variance.
- Whether a student is female or male accounts for roughly 53 percent of the variance.

Counts and GPA Means

For the juniors and seniors included in the regression analysis, the table below shows the number of students, the number of grades, and the mean GPA by fall term. The average GPA increased by 0.21 points between 1984 and 2004.

Junior/Senior Grades **Regression Sample** **Fall 1984 – 2004**

Fall	Number of Students	Number of Grades	Mean GPA
1984	3,788	17,303	2.97
1988	5,867	26,966	3.05
1992	8,235 ²	36,773 ²	3.05
1996	6,585	28,476	3.10
2000	7,338	31,322	3.18
2004	7,694	32,671	3.18
Total	39,507	173,511	3.09

² The comparative increase in the number of 1992 grades and students is believed to be due to a combination of changing demographics in Kansas high school graduates and national recognition for the 1988 NCAA basketball championship.

**Average GPAs
All Juniors and Seniors**

The following three tables include mean GPA data over time for all juniors and seniors – those included in the regression analyses as well as those omitted from the regression analyses due to lack of available ACT scores. The first table shows the average GPAs at the university level; the second table shows the average GPAs broken down by the academic unit in which the courses were offered; and the third table indicates average GPAs by the academic unit of the student major.

**Student Grades
All Juniors/Seniors
Fall 1984 - 2004**

Fall	Number of Students	Number of Grades	Mean GPA
1984	7,281	32,136	2.94
1988	8,374	37,300	3.02
1992	10,991 ²	48,060 ²	3.03
1996	8,833	37,413	3.07
2000	9,323	39,066	3.15
2004	9,822	40,713	3.16
Total	54,624	234,688	3.06

² The comparative increase in the number of 1992 grades and students is believed to be due to a combination of changing demographics in Kansas high school graduates and national recognition for the 1988 NCAA basketball championship.

**Average GPA of Courses in the College and Schools
All Juniors/Seniors
Fall 1984 - 2004**

<i>Courses In</i>	Fall					
	1984	1988	1992	1996	2000	2004
College of Liberal Arts and Sciences	2.90	2.93	2.95	2.97	3.05	3.03
School of Architecture and Urban Design	2.65	2.69	2.76	3.03	3.18	3.14
School of Business	2.84	2.97	2.90	3.03	3.09	3.19
School of Education	3.50	3.54	3.53	3.56	3.58	3.64
School of Engineering	2.77	2.95	2.92	2.89	2.95	3.07
School of Fine Arts	3.27	3.25	3.27	3.31	3.44	3.47
School of Journalism	2.89	3.01	3.03	3.14	3.11	3.24
School of Pharmacy	3.01	3.07	3.04	3.35	3.41	3.49
School of Social Welfare	3.04	3.45	3.50	3.52	3.57	3.70

**Average GPA of Majors in the College and Schools
All Juniors/Seniors
Fall 1984 - 2004**

<i>Student Major</i>	Fall					
	1984	1988	1992	1996	2000	2004
College of Liberal Arts and Sciences	2.88	2.93	2.97	2.99	3.06	3.02
School of Architecture and Urban Design	2.72	2.78	2.80	3.06	3.12	3.22
School of Business	3.01	3.17	3.12	3.18	3.28	3.32
School of Education	3.22	3.31	3.33	3.38	3.45	3.52
School of Engineering	2.94	3.06	3.05	3.00	3.06	3.14
School of Fine Arts	3.02	2.99	2.98	3.16	3.26	3.30
School of Journalism	3.00	3.11	3.14	3.12	3.18	3.30
School of Pharmacy	2.98	3.09	3.07	3.38	3.43	3.49
School of Social Welfare	2.98	3.32	3.38	3.56	3.53	3.62

Application of Princeton University Grading Standards

Beginning in Fall 2004, Princeton University adopted a new set of grading policies for undergraduate courses based on the recommendations of a faculty committee. One of the new grading expectations for Princeton departments and programs is that A's should account for less than 55 percent of the grades awarded in junior and senior course work. (See the Princeton University website <http://www.princeton.edu/~odoc/> for more information)

Applying this standard at KU, the overall percentage of A's assigned to juniors and seniors was below the 55 percent threshold. On average, the percentage of A's awarded in junior/senior course work was 40 percent during the period from Fall 1984 to Fall 2004. However, there is a steady increase in percentage of assigned A's by fall term over the period, from 34 percent in Fall 1984 to 45 percent in Fall 2004.

Examining the proportion of A's assigned to juniors and seniors by student credit hours shows a similar pattern. On average, the percentage of A's awarded during the period from Fall 1984 to Fall 2004 was 38 percent, ranging from 32 percent in Fall 1984 to 43 percent in Fall 2004.

The table on the following page details the percentage of A's, B's, C's, D's, and F's by course and by student credit hours during the period of Fall 1984 and Fall 2004.

The remainder of this section shows the percentage of A's in courses broken out by academic unit and by gender.

**Distribution of Letter Grades by Term
All Juniors/Seniors
Fall 1984 – 2004**

	Grades																			
	A				B				C				D				F			
	Count	% of Total	Credit Hours	% of SCH	Count	% of Total	Credit Hours	% of SCH	Count	% of Total	Credit Hours	% of SCH	Count	% of Total	Credit Hours	% of SCH	Count	% of Total	Credit Hours	% of SCH
Fall 1984	11,150	35%	30,687	32%	11,525	36%	35,218	37%	6,878	21%	21,813	23%	1,699	5%	5,553	6%	884	3%	2,777	3%
Fall 1988	13,912	37%	38,324	35%	13,704	37%	41,814	38%	7,245	19%	22,734	21%	1,564	4%	5,006	5%	875	2%	2,708	2%
Fall 1992	18,106 ²	38%	50,098 ²	35%	17,684	37%	54,228	38%	9,116	19%	28,777	20%	2,100	4%	6,731	5%	1,054	2%	3,253	2%
Fall 1996	15,229	41%	43,398	39%	13,300	36%	41,011	37%	6,385	17%	20,165	18%	1,572	4%	4,940	4%	927	2%	2,857	3%
Fall 2000	17,281	44%	49,813	42%	13,529	35%	41,875	36%	6,046	15%	18,978	16%	1,370	4%	4,325	4%	840	2%	2,541	2%
Fall 2004	18,360	45%	52,748	43%	13,918	34%	42,510	35%	6,053	15%	18,929	16%	1,413	3%	4,451	4%	969	2%	3,015	2%
Total	94,038	40%	265,069	38%	83,660	36%	256,656	37%	41,723	18%	131,397	19%	9,718	4%	31,006	4%	5,549	2%	17,150	2%

² The comparative increase in the numbers of students and student credit hours in 1992 is believed to be due to a combination of changing demographics in Kansas high school graduates and national recognition for the 1988 NCAA basketball championship.

The pattern of A's over time differs by the academic unit of the course and is occasionally greater than 55 percent.

**Distribution of A's
by Term and by Course Academic Unit
All Juniors/Seniors
Fall 1984 - 2004**

<i>Courses In</i>	Percentage of A's					
	Fall					
	1984	1988	1992	1996	2000	2004
College of Liberal Arts and Sciences	33%	34%	34%	37%	40%	40%
School of Architecture and Urban Design	13%	13%	19%	32%	39%	40%
School of Business	28%	28%	27%	34%	36%	44%
School of Education	65%	65%	65%	67%	69%	73%
School of Engineering	30%	37%	36%	33%	36%	40%
School of Fine Arts	50%	51%	51%	51%	59%	61%
School of Journalism	25%	27%	27%	33%	31%	35%
School of Pharmacy	36%	40%	34%	51%	56%	60%
School of Social Welfare	35%	55%	60%	64%	66%	78%

The distribution of A's across academic units also differs by gender and is occasionally greater than 55 percent.

**Distribution of A's
by Term and by Course Academic Unit
Male Juniors/Seniors
Fall 1984 - 2004**

<i>Courses In</i>	Percentage of A's					
	Fall					
	1984	1988	1992	1996	2000	2004
College of Liberal Arts and Sciences	31%	31%	32%	33%	36%	36%
School of Architecture and Urban Design	13%	14%	18%	32%	38%	38%
School of Business	26%	27%	24%	33%	33%	41%
School of Education	65%	65%	66%	63%	64%	65%
School of Engineering	30%	38%	36%	33%	37%	40%
School of Fine Arts	49%	49%	47%	48%	52%	60%
School of Journalism	24%	21%	25%	30%	25%	33%
School of Pharmacy	33%	38%	29%	43%	52%	58%
School of Social Welfare	29%	49%	63%	54%	55%	76%

**Distribution of A's
by Term and by Course Academic Unit
Female Juniors/Seniors
Fall 1984 - 2004**

<i>Courses In</i>	Percentage of A's					
	Fall					
	1984	1988	1992	1996	2000	2004
College of Liberal Arts and Sciences	35%	37%	37%	40%	44%	43%
School of Architecture and Urban Design	12%	11%	22%	33%	40%	42%
School of Business	31%	30%	31%	36%	41%	49%
School of Education	65%	65%	65%	71%	74%	79%
School of Engineering	28%	30%	34%	32%	32%	41%
School of Fine Arts	51%	52%	55%	54%	64%	62%
School of Journalism	26%	31%	28%	35%	35%	36%
School of Pharmacy	39%	40%	37%	55%	59%	62%
School of Social Welfare	36%	57%	59%	67%	69%	78%

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Appendix

**Student Count and Grade Distribution by
School of Major and Student Gender
All Juniors/Seniors
Fall 1994 to Fall 2004 Graded Extracts**

Note: Only grades that count toward the GPA were included

School of Student's Major	Term											
	1984 Fall						1988 Fall					
	Female			Male			Female			Male		
	# Students	# Grades	Mean	# Students	# Grades	Mean	# Students	# Grades	Mean	# Students	# Grades	Mean
COLLEGE OF LIB ARTS & SCIENCES	1598	3771	2.79	2034	4740	2.63	1991	4608	2.87	2447	5752	2.70
SCHOOL OF ARCHITECTURE & UD	62	165	2.64	194	546	2.72	81	231	2.76	189	547	2.76
SCHOOL OF BUSINESS	377	836	2.94	496	1178	2.83	280	613	3.04	458	1031	3.05
SCHOOL OF EDUCATION	269	799	3.09	98	293	2.87	404	1187	3.10	141	412	3.02
SCHOOL OF ENGINEERING	121	293	2.85	695	1734	2.76	102	249	2.73	685	1655	2.87
SCHOOL OF FINE ARTS	291	755	2.94	197	582	2.79	325	922	2.96	180	516	2.76
SCHOOL OF JOURNALISM	333	991	2.96	220	669	2.81	388	1115	3.11	279	799	2.90
SCHOOL OF PHARMACY	112	263	2.85	93	229	2.81	152	329	2.90	118	251	2.99
SCHOOL OF SOCIAL WELFARE	78	202	2.92	13	39	2.81	134	313	3.25	19	45	3.10

Appendix

**Student Count and Grade Distribution by
School of Major and Student Gender
All Juniors/Seniors
Fall 1994 to Fall 2004 Graded Extracts**

Note: Only grades that count toward the GPA were included

School of Student's Major	Term											
	1992 Fall						1996 Fall					
	Female			Male			Female			Male		
	# Students	# Grades	Mean	# Students	# Grades	Mean	# Students	# Grades	Mean	# Students	# Grades	Mean
COLLEGE OF LIB ARTS & SCIENCES	3095	7124	2.86	3349	7805	2.72	2621	5805	2.89	2495	5673	2.70
SCHOOL OF ARCHITECTURE & UD	96	288	2.82	242	723	2.68	55	156	2.97	157	479	2.94
SCHOOL OF BUSINESS	318	693	3.04	470	1027	2.96	254	520	3.10	461	1006	3.01
SCHOOL OF EDUCATION	517	1497	3.14	230	665	3.08	365	871	3.20	232	615	3.05
SCHOOL OF ENGINEERING	129	300	2.89	703	1656	2.89	138	306	2.90	639	1419	2.82
SCHOOL OF FINE ARTS	368	1030	2.92	313	919	2.80	327	930	3.03	241	685	2.95
SCHOOL OF JOURNALISM	443	1263	3.07	293	816	3.03	254	712	3.07	160	443	2.96
SCHOOL OF PHARMACY	177	383	3.01	116	259	2.86	183	368	3.25	123	265	3.07
SCHOOL OF SOCIAL WELFARE	116	288	3.26	16	37	3.08	117	251	3.44	10	24	3.34

Appendix

**Student Count and Grade Distribution by
School of Major and Student Gender
All Juniors/Seniors
Fall 1994 to Fall 2004 Graded Extracts**

Note: Only grades that count toward the GPA were included

School of Student's Major	Term											
	2000 Fall						2004 Fall					
	Female			Male			Female			Male		
	# Students	# Grades	Mean	# Students	# Grades	Mean	# Students	# Grades	Mean	# Students	# Grades	Mean
COLLEGE OF LIB ARTS & SCIENCES	2748	5992	2.98	2485	5602	2.76	2849	6032	2.92	2808	6053	2.74
SCHOOL OF ARCHITECTURE & UD	90	247	3.14	153	454	2.99	167	459	3.16	239	653	3.02
SCHOOL OF BUSINESS	288	689	3.23	467	1194	3.11	316	818	3.25	547	1471	3.12
SCHOOL OF EDUCATION	354	793	3.31	196	531	3.09	410	964	3.36	233	596	3.22
SCHOOL OF ENGINEERING	159	368	2.92	640	1493	2.87	114	252	2.93	512	1093	2.95
SCHOOL OF FINE ARTS	384	1019	3.19	243	675	2.95	391	1045	3.11	241	610	3.11
SCHOOL OF JOURNALISM	388	1046	3.16	189	554	2.90	418	1082	3.24	170	451	3.07
SCHOOL OF PHARMACY	255	498	3.27	170	330	3.26	159	298	3.28	115	208	3.29
SCHOOL OF SOCIAL WELFARE	102	240	3.43	9	19	3.50	122	252	3.52	11	25	3.07