

PLUS MINUS GRADING STUDY, FALL 1994, SPRING 1995, FALL 1995, AND SPRING 1996, AND FALL 1996
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 Executive Summary Plus/minus grading was implemented beginning with new students in the fall of
 1994. Instructors have the freedom to use +/- or not to use it as appropriate. However, University policy
 states that students enrolled in each section of a multiple section course in which the material, the
 sequencing of its treatment, and the examinations are common to all sections should be graded on the
 same scale. To that end, the selection of the grading scale to use (i.e., +/- or not) should be a common
 selection agreed to by every teacher of the course. This summary presents an analysis of the semesters
 and course sections where +/- was used. The central research questions are the extent of utilization of +/-
 and its effect on average GPAs of various student populations. Analysis of the effect cannot be directly
 accomplished since only grades are available, and not the quality of the student's activity or instructor's
 measurement in arriving at that grade. In this study, grades are 'adjusted' by removing pluses and minuses
 and recomputing the GPA. In 'adjusting' grades by removing pluses and minuses, we may not be accurately
 reflecting the grades which would have been received if the +/- grading system did not exist. Without
 consulting each individual instructor about each individual student in each individual course, we cannot be
 sure that, for example, a B- would have been a B and not a C. Therefore, it is possible that our
 assumptions could have skewed the numbers slightly in one direction or another. The findings of this study
 include the following: * Plus and minus grades were not assigned evenly in the five semesters studied, in
 the fall of 1994, more + were assigned than -. For the other four semesters, there were more - assigned
 than +. * All but one of those multiple-section courses defined by University policy used +/- grading
 consistently. The single exception used +/- grading in one section for 2 of the 5 semesters analyzed. * The
 proportion of sections and credit hours using +/- has been generally increasing. There is a broad variation
 in implementation among the individual colleges. * An increased value for A+ would have affected the GPA
 of some students. However, since more A-s than A+s are given in spring 1995, fall 1995, spring 1996, and
 fall 1996, some GPAs would not be increased, even with a higher value for A+. _A Short History of the
 Issue_ Chancellor Monteith, in a memorandum dated February 26, 1993, requested that the Office of the
 Provost develop strategies necessary to implement +/- grading. The scale recommended by the Faculty
 Senate was adopted, in order that the faculty may discriminate more precisely among levels of academic
 performance, except that A+ will not have added value above 4.00. The policy stated that the +/- grades
 will be reflected on the transcripts of all students at the end of the fall 1994 semester. The values assigned
 to + and - will be part of the GPA calculation for all new undergraduate and graduate degree students who
 enroll in the summer and fall of 1994, and thereafter, and for all new or continuing UGS (undergraduate
 special) or PBS (post-baccalaureate special) students. However, +/- grades without grade points will be
 used for continuing undergraduate and graduate degree students whose first enrollment was prior to the
 summer and fall of 1994. This exemption will end in the 1998 fall semester, at which time all students will
 receive the grade points assigned to the +/- grades they receive. Concern was expressed by some students
 that the introduction of +/- grading would significantly reduce grade point averages based on a report from
 an earlier experiment in which NCSU faculty could assign +/- grades that did not appear on the transcript
 or effect GPAs. In the experiment, it appeared that twice as many minuses as pluses were assigned. The
 scale for +/- grading is as follows: * A+ 4.00 * A 4.00 * A- 3.67 * B+ 3.33 * B 3.00 * B- 2.67 * C+ 2.33 *
 C 2.00 * C- 1.67 * D+ 1.33 * D 1.00 * D- 0.67 * F 0.00 _The Research Questions Addressed_ The
 following data are presented in this report for both graduate and undergraduate students to show the
 utilization of +/- grading. 1. Frequency distribution of grades (Table 1). The tables show how many pluses
 and minuses were given in each semester. The assumption was that more pluses would be given than
 minuses. In all semesters studied except fall 1994, this is not the case. Also shown is the breakdown of
 grades and the mean GPA for each semester. 2. Consistency of use of + and - grades in multiple section
 courses (Question 2). There was a policy that stated that all students enrolled in each section of a multiple
 section course in which the material, the sequencing of its treatment, and the examinations are common to

all sections should be graded on the same scale. To that end, the selection of the grading scale to use (i.e., +/- or not) should be a common selection agreed to by every teacher of the course. Only one course was found that did not adhere to this policy over 2 of the 5 semesters analyzed. 3. Proportion of sections for which faculty assigned + and - grades and proportion of credit hours delivered in sections for which + and - grades were assigned (Table 3). For items 2 & 3 involving proportions of sections and hours and consistency over multiple section courses, all registered students in the studied semesters were used in the calculations. The following data are presented as evidence of the effect of +/- on various student populations. The direct comparison of grades with and without +/- is problematic since such an analysis is not feasible given the need to determine intent of the instructor in assigning a grade. 1. Comparison between GPAs with and without plus and minus grades (Table 4). 2. Distribution of differences between GPA computed with +/- grades and with all A+ given a value of 4.33. This would show if the lack of an increased value for A+ is the main reason for any significant differences in GPA (Table 5). 3. Segmentation of the student body at the end of each semester with respect to those whose GPA ≥ 2.0 (3.0 for Graduate students), those on academic warning, and those suspended. The fall 1994, fall 1995, and fall 1996 cohorts are the population which is affected by +/- grading and, therefore, was used for items 4, 5, and 6, and for the frequency distributions of grades (Item 1). The relevant course data for these students, by individual student, was used for the fall 1994, spring 1995, fall 1995, spring 1996, and fall 1996 semesters. For each grade received, the quality points were calculated by multiplying the numeric value of the letter grade by the number of credit hours for the course. In items 4 and 6, the 'adjusted' quality points were calculated using no + and -. For item 5, the 'adjusted' quality points were calculated by assigning a value of 4.33 to A+, thus negating any effect of having no higher value added for A+. 4. Breakdown of Grades and Mean GPA by Semester for all students for the 21 semesters from fall 1986 through fall 1996, by graduate and undergraduate students. All grades in all classes were used in this analysis. Tables show the number of each grade received in each semester, and graphs show the comparison on the semesters. All plus and minus grades were counted in this analysis, even though there may have been some plus and minus grades awarded which were not included in the calculation of the student's GPA. A table and graph are included showing the progression of the GPA over the course of the 21 semesters for both graduate and undergraduate students. QUESTION 1: Frequency Distribution of Grades and Mean GPA, at Undergraduate and Graduate Level The counts and percentages shown for each group of students are only for those students for whom +/- grading was used in calculating the GPA. 'Count' represents each instance of student and course where a grade was assigned. Except for fall 1994, more minuses were given than pluses. Many more A- grades were given than A+ grades.

Year	Level	Grade	Count	Percentage
*Fall 1994 *	*Graduate*	A+	154	5.1
		A	715	2.7
		B+	152	5.0
		B	664	2.5
		B-	2709	89.9
		C	24669	94.7
	Undergraduate	A+	55	1.8
		A	224	0.9
		B+	1582	52.5
		B	8438	32.4
		B-	103	3.4
		C	337	1.3
		C+	85	2.8
*Spring 1995 *	*Graduate*	A+	202	7.0
		A	2416	10.1
		B+	221	7.7
		B	2700	11.3
		B-	18859	78.7
		C	2456	85.3
	Undergraduate	A+	94	3.3
		A	419	1.7
		B+	1595	55.4
		B	6073	25.3
		B-	188	6.5
		C	1113	4.6
		C+	103	3.6
*Fall 1995 *	*Graduate*	A+	3986	77.7
		A	33797	78.9
		B+	552	10.8
		B	4202	9.8
		B-	589	11.5
		C	4848	11.3
	Undergraduate	A+	199	3.9
		A	865	2.0
		B+	2539	49.5
		B	11186	26.1
		B-	487	9.5
		C	1981	4.6
		C+	324	6.3
*Fall 1996 *	*Graduate*	A+	649	11.0
		A	4534	77.0
		B+	43100	76.1
		B	649	11.0
		B-	709	12.0
		C	7064	12.5
	Undergraduate	A+	170	3.8
		A	941	2.4
		B+	2228	50.1
		B	9251	23.5
		B-	409	9.2
		C	2046	5.2
		C+	255	5.7

The following tables show the mean GPA by semester for graduate and undergraduate students in the fall 1994, fall 1995, and fall 1996 cohorts,

students entering the university in those 3 semesters. These are the students who were affected by plus/minus grading. The first table shows the actual mean GPA, calculated by summing all of the quality points and dividing by the total credit hours. The second table shows the mean GPA computed the same way but without using the plusses and minuses. *Mean GPA by Semester for Graduate and Undergraduate Students in the Fall 1994, Fall 1995, and Fall 1996 Cohorts* *Semester* *Undergraduate GPA* *Graduate GPA* Fall 94 2.697 3.488 Spring 95 2.647 3.597 Fall 95 2.658 3.565 Spring 96 2.655 3.543 Fall 96 2.717 3.541 *Mean Adjusted GPA by Semester for Graduate and Undergraduate Students in the Fall 1994, Fall 1995, and Fall 1996 Cohorts* *Semester* *Undergraduate GPA* *Graduate GPA* Fall 94 2.700 3.495 Spring 95 2.658 3.610 Fall 95 2.671 3.580 Spring 96 2.668 3.559

QUESTION 2: Was +/- Grading Used Consistently In Multiple Section Courses with a Common Final Examination? In the +/- implementation, the stated policy requires that plus and minus grades be used consistently in multiple section courses in which the material, the sequencing of its treatment, and the final examination are all common. Only one course, ACC 210, did not use +/- grading consistently. In fall 1994, no plus or minus grades were given in the 16 sections taught. In spring 1995, one C- was given in one section out of the 15 sections taught. In fall 1995, 6 C-'s and 3 A+'s were given in one section out of the 13 sections taught. In spring 1996 and fall 1996, no plus or minus grades were given in the sections taught.

_QUESTION 3: Proportion of Sections and Credit Hours using +/- Grading _ The following tables, organized by college/school, show the proportion of total sections and total credit hours for which +/- grading was used in each semester, for graduate and undergraduate level courses. For most of the schools, an increase is evident each semester in the number of sections using +/- grading.

Percent of Sections Using +/- Grades by School - Graduate Level Courses* *School* *Name* *Fall 1994* *Spring 1995* *Fall 1995* *Spring 1996* *Fall 1996

11 Ag & Life Science	7.7	26.3	13.2	30.0	23.4	12 Design	45.5	50.0	80.0	75.0	88.9
13 Education & Psychology	23.4	28.4	45.3	39.8	48.7	14 Engineering	23.8	35.0	44.6	44.7	47.6
15 Forest Resources	21.4	43.8	31.3	27.8	27.8	16 Humanities & Social Sciences	27.8	49.4	64.6	71.3	67.4
17 Physical & Math Sciences	20.8	33.3	52.3	39.6	55.7	18 Textiles	8.3	14.3	0.0	20.0	20.0
19 Veterinary Medicine	13.3	0.0	26.7	17.7	27.3	20 Management	10.7	37.1	42.5	52.1	56.8
Totals	21.5	34.4	45.9	45.7	50.3						

Percent of Sections Using +/- Grades by School - Undergraduate Courses* *School* *Name* *Fall 1994* *Spring 1995* *Fall 1995* *Spring 1996* *Fall 1996

05 Administration	28.6	47.3	56.5	50.9	60.9	11 Ag & Life Science	10.3	21.8	24.2	27.3	27.4
12 Design	32.7	76.3	79.1	81.4	89.7	13 Education & Psychology	9.5	31.9	31.9	38.5	29.6
14 Engineering	7.9	19.3	28.8	28.7	38.4	15 Forest Resources	6.3	21.9	22.2	27.9	44.7
16 Humanities & Social Sciences	18.4	52.5	39.5	60.2	61.1	17 Physical & Math Sciences	4.9	31.6	30.5	39.4	38.8
18 Textiles	6.5	26.1	13.5	10.8	20.0	19 Veterinary Medicine	0.0	33.3	0.0	33.3	0.0
20 Management	7.9	29.0	37.9	31.9	38.4	Totals	13.5	41.2	46.1	48.2	49.4

For most of the schools, an increase is evident each semester in the number of credit hours using +/- grading. Where the percentage of credit hours is greater than the percentage of sections for the same school in the same semester, we can assume that the larger sections are the ones that are using +/- grading. Likewise, if the percentage of credit hours is less than the percentage of sections for the same school in the same semester, we can assume that the smaller sections are the ones that are using +/- grading.

Percent of Credit Hours Using +/- Grades by School - Graduate Level Courses* *School* *Name* *Fall 1994* *Spring 1995* *Fall 1995* *Spring 1996* *Fall 1996

11 Ag & Life Science	18.8	31.6	21.9	31.0	24.2	12 Design	40.7	63.1	95.1	89.3	94.8
13 Education & Psychology	22.8	25.6	53.5	46.4	60.7	14 Engineering	29.4	43.2	56.5	54.4	57.2
15 Forest Resources	17.0	27.9	35.0	21.6	35.5	16 Humanities & Social Sciences	35.0	53.9	74.4	77.7	74.8
17 Physical & Math Sciences	23.1	38.8	60.2	57.1	61.8	18 Textiles	19.7	10.7	0.0	22.2	21.8
19 Veterinary Medicine	23.4	0.0	24.1	1.1	17.3	20 Management	9.2	28.0	36.6	42.9	45.2
Totals	24.4	32.4	49.2	43.5	49.0						

Percent of Credit Hours Using +/- Grades by School - Undergraduate Courses* *School* *Name* *Fall 1994* *Spring 1995* *Fall 1995* *Spring 1996* *Fall 1996

05 Administration	31.7	62.1	57.4	45.8	70.7	11 Ag & Life Science	13.1	17.7	18.0	25.5	18.9
12 Design	49.5	82.7	86.6	91.4	98.0	13 Education & Psychology	3.5	13.5	36.3	37.2	27.2
14 Engineering	11.4	21.8	28.2	24.9	47.8	15 Forest Resources	3.0	26.8	35.4	34.1	42.3
16 Humanities & Social Sciences	23.9	74.1	74.9	76.1	72.9	17 Physical & Math Sciences	4.2	34.7	32.4	43.9	54.1
18 Textiles	25.9	58.8	27.2	32.5	25.7	19 Veterinary Medicine	0.0	46.6	0.0	12.9	0.0
20 Management	7.3	49.5	64.1	55.8	61.9	Totals	13.7	49.7	47.4	52.1	55.1

QUESTION 4: Effect on GPA Using +/- Grading The effect on GPA was calculated by starting with the actual GPA and subtracting a GPA computed by removing all +'s and -'s and assigning a numerical value to the resulting grade. A negative difference implies that the actual GPA using +/- grading is lower than it would have been without +/- grading. In this case, the student received more - than +. A positive difference implies that the actual GPA using +/- grading is higher than it would have been without +/- grading. In this case, the student received more + than -. Of course there is no way of knowing if a B+ would have been an B instead of an A. The assumption is that a B+ would have been a B.

The percent of students in each column category is recorded here. It is important to remember that this is analysis of apparent effect, the intent of instructor in assigning original grade cannot be construed from this data. There is, of course, a wide variation in the size of the population among the colleges. The population used in these calculations is increasing in size over time, since it includes only those students eligible for +/- grading, a number which increases with each new cohort after fall 1994. The majority of students showed no difference in this calculation. Plus/minus grading produced a lower GPA for about 11% of the graduate students and 11% of the undergraduate students in fall 1994, 15% of the graduate students and 33% of the undergraduate students in spring 1995, 20% of the graduate students and 33% of the undergraduate students in fall 1995, 20% of the graduate students and 34% of the undergraduate students in spring 1996, and 22% of the graduate students and 34% of the undergraduate students in fall 1996. The group with a higher GPA using +/- grading has also increased over time starting with 7% of graduate students and 8% of undergraduate students in fall 1994, increasing to 11% of graduate students and 23% of undergraduate students by fall 1996.

*Fall 1994 * *Percent of Graduate students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* 07 Administration -- PBS 7.4 0.8 88.4 3.3 11 Ag & Life Science 0.0 5.6 90.2 4.2 12 Design 9.1 13.6 63.6 13.6 13 Education & Psychology 4.8 4.8 85.5 4.8 14 Engineering 1.1 5.3 85.6 8.0 15 Forest Resources 0.0 4.3 89.4 6.4 16 Humanities & Social Sciences 2.5 15.3 75.4 6.8 17 Physical & Math Sciences 1.4 11.5 84.2 2.9 18 Textiles 0.0 7.5 90.0 2.5 19 Veterinary Medicine 1.1 28.7 48.9 21.3 20 Management 0.8 3.2 89.6 6.4 Totals 2.4 8.2 82.5 6.9 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* Administration - Undeclared 0.3 10.8 82.5 6.4 11 Ag & Life Science 0.0 11.3 82.1 6.6 12 Design 0.0 21.0 65.9 13.0 13 Education & Psychology 0.6 11.0 78.0 10.4 14 Engineering 0.4 8.2 84.0 7.5 15 Forest Resources 0.5 8.7 84.8 6.0 16 Humanities & Social Sciences 0.1 14.1 74.4 11.4 17 Physical & Math Sciences 0.0 6.7 86.6 6.7 18 Textiles 0.0 8.6 86.6 4.7 19 Veterinary Medicine 0.0 0.0 100.0 0.0 20 Management 0.0 9.5 83.2 7.3 Totals 0.2 10.4 81.7 7.7 *Spring 1995 * *Percent of Graduate students* *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* 07 Administration -- PBS 10.8 4.7 78.4 6.1 11 Ag & Life Science 2.9 8.6 80.7 7.9 12 Design 4.3 29.8 61.7 4.3 13 Education & Psychology 1.9 8.9 87.3 1.9 14 Engineering 1.9 10.4 80.3 7.3 15 Forest Resources 9.3 14.0 67.4 9.3 16 Humanities & Social Sciences 7.0 19.3 57.9 15.8 17 Physical & Math Sciences 0.7 18.7 74.1 6.5 18 Textiles 0.0 5.6 86.1 8.3 19 Veterinary Medicine 1.1 1.1 97.7 0.0 20 Management 1.7 10.7 78.5 9.1 Totals 3.6 11.1 78.3 7.0 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 > * *-.250 to 0 * *No difference* *Positive effect* Administration - Undeclared 2.0 25.7 49.7 22.6 11 Ag & Life Science 0.2 29.4 50.5 19.9 12 Design 3.9 41.7 33.1 21.3 13 Education & Psychology 0.6 38.3 39.4 21.7 14 Engineering 0.4 30.8 43.5 25.3 15 Forest Resources 0.0 37.0 41.4 21.5 16 Humanities & Social Sciences 0.6 38.9 36.2 24.3 17 Physical & Math Sciences 0.4 31.2 48.8 19.6 18 Textiles 0.9 36.9 36.4 25.8 19 Veterinary Medicine 0.0 0.0 0.0 0.0 20 Management 0.4 30.9 45.3 23.4 Totals 0.7 32.0 44.5 22.9 *Fall 1995 * *Percent of Graduate students* *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* 07 Administration -- PBS 0.0 0.0 0.0 0.0 11 Ag & Life Science 1.7 7.7 82.6 8.0 12 Design 11.0 19.5 35.4 34.1 13 Education & Psychology 9.7 10.3 72.6 7.4 14 Engineering 3.5 16.2 68.9 11.5 15 Forest Resources 9.3 11.6 67.4 11.6 16 Humanities & Social Sciences 12.0 20.6 52.4 15.0 17 Physical & Math Sciences 1.6 21.8 61.5 15.1 18 Textiles 3.6 5.4 83.9 7.1 19 Veterinary Medicine 1.1 20.4 67.4 11.0 20 Management 4.3 14.9 68.1 12.8 Totals 5.3 15.2 67.5 12.0 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* 11 Ag & Life Science 0.3 28.4 51.0 20.3 12 Design 2.1 38.2 33.7 26.0 13 Education & Psychology 1.2 28.9 49.6 20.4 14 Engineering 0.3 31.1 48.0 20.6 15 Forest Resources 0.9 29.3 49.9 20.0 16 Humanities & Social Sciences 0.8 36.8 36.7 25.7 17 Physical & Math Sciences 2.3 29.7 48.2 19.9 18 Textiles 1.0 30.8 46.5 21.6 19 Veterinary Medicine 0.0 0.0 100.0 0.0 20 Management 0.9 35.3 41.9 21.9 31 First Year College 0.2 40.2 33.1 26.5 Totals 0.7 32.5 44.8 22.0 *Spring 1996 * *Percent of Graduate students* *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* 07 Administration -- PBS 0.0 0.0 100.0 0.0 11 Ag & Life Science 3.4 12.9 78.0 5.7 12 Design 17.0 23.9 48.9 10.2 13 Education & Psychology 5.6 16.3 68.6 9.5 14 Engineering 5.0 16.3 71.1 7.6 15 Forest Resources 6.5 13.0 70.1 10.4 16 Humanities & Social Sciences 14.8 15.2 50.0 20.0 17 Physical & Math Sciences 0.9 17.4 70.0 11.7 18 Textiles 0.0 12.8 66.7 20.5 19 Veterinary Medicine 0.6 0.6 98.3 0.6 20 Management 1.0 13.8 67.3 17.9 Totals 5.2 14.3 70.2 10.3 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* 11 Ag & Life Science 0.2 30.4 50.5 18.9 12 Design 2.3 41.8 28.5 27.3 13 Education & Psychology 0.9 33.5 42.1 23.5 14 Engineering 0.6 30.0 45.3 24.1 15 Forest Resources 1.1 30.8 46.4 21.7 16 Humanities & Social Sciences 1.0 38.6 37.5 22.9 17 Physical & Math Sciences 0.8 37.7 38.7 22.8 18 Textiles 0.3 33.9 47.5 18.4 19 Veterinary Medicine 0.0 0.0 0.0 0.0 20 Management 0.6 37.1 37.9 24.4 31 First Year College 0.1 38.4 35.5 26.0 Totals 0.6 33.8

43.0 22.6 *Fall 1996 * *Percent of Graduate students* *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* 07 Administration -- PBS 50.0 0.0 25.0 25.0 11 Ag & Life Science 3.1 8.9 77.7 10.3 12 Design 11.9 25.2 45.9 17.0 13 Education & Psychology 7.7 14.6 68.8 8.9 14 Engineering 5.3 15.9 69.7 9.2 15 Forest Resources 1.8 13.6 70.9 13.6 16 Humanities & Social Sciences 6.7 22.0 56.9 14.5 17 Physical & Math Sciences 1.8 16.4 73.2 8.6 18 Textiles 3.8 19.2 75.0 1.9 19 Veterinary Medicine 0.4 18.7 63.4 17.5 20 Management 3.4 24.1 58.6 13.9 Totals 4.8 16.8 67.0 11.4 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* *Positive effect* 07 Administration 7.7 0.0 92.3 0.0 11 Ag & Life Science 0.2 29.9 49.5 20.4 12 Design 4.1 39.0 33.2 23.7 13 Education & Psychology 0.8 31.4 45.5 22.3 14 Engineering 0.5 32.7 44.1 22.7 15 Forest Resources 0.4 27.4 50.7 21.6 16 Humanities & Social Sciences 1.3 37.0 36.7 25.0 17 Physical & Math Sciences 0.9 31.8 48.5 18.9 18 Textiles 0.4 32.0 43.8 23.8 19 Veterinary Medicine 0.0 8.3 91.7 0.0 20 Management 0.9 35.6 39.6 23.8 31 First Year College 0.3 38.5 34.7 26.4 Totals 0.7 33.4 43.1 22.8

QUESTION 5: Distribution of Differences in GPA, with A+ Given Value of 4.33 The potential effect of giving A+ a value of 4.33 was calculated by computing the student's GPA with A+ given a value of 4.33, to conform to the +/- grades used for B, C, D, and F, and then subtracting the result from the recorded GPA using +/- grading, as defined. A negative difference implies that the actual GPA is lower than it would have been with A+ having a higher value. The percent of students in each column category is recorded here. It is important to remember that this is analysis of apparent effect, since the intent of instructor in assigning original grade cannot be construed from this data. With the addition of a value of 4.33 for A+, about 4% of the graduate students and 4% of the undergraduate students in fall 1994 would see an increase in the GPA with +/- grading. The figures for spring 1995 are about 7% for graduate students and 7% for undergraduate students, for fall 1995 about 7% for graduate students and 11% for undergraduate students, for spring 1996 about 8% for graduate students and 9% for undergraduate students, and for fall 1996 about 9% for graduate students and 11% for undergraduate students.

*Fall 1994 * *Percent of Graduate students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* 07 Administration - PBS 1.7 0.0 98.3 11 Ag & Life Science 0.0 1.4 98.6 12 Design 0.0 11.4 88.6 13 Education & Psychology 0.0 1.2 98.8 14 Engineering 0.0 5.3 94.7 15 Forest Resources 2.1 4.3 93.6 16 Humanities & Social Sciences 0.8 5.1 94.1 17 Physical & Math Sciences 0.0 4.3 95.7 18 Textiles 0.0 10.0 90.0 19 Veterinary Medicine 1.1 2.1 96.8 20 Management 0.0 3.2 96.8 Totals 0.4 3.6 96.0 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference>* Administration - Undeclared 0.0 5.9 94.1 11 Ag & Life Science 0.0 3.7 96.3 12 Design 7.2 5.1 87.7 13 Education & Psychology 0.0 5.2 94.8 14 Engineering 0.0 3.8 96.2 15 Forest Resources 0.0 4.9 95.1 16 Humanities & Social Sciences 0.1 2.7 97.2 17 Physical & Math Sciences 0.0 0.7 99.3 18 Textiles 0.0 4.3 95.7 19 Veterinary Medicine 0.0 0.0 100.0 20 Management 0.2 1.8 98.0 Totals 0.2 3.7 96.1

*Spring 1995 * *Percent of Graduate students * *School* *Name* *-.333 to -.250 * *> -.250 to 0 * *No difference* 07 Administration - PBS 1.3 0.0 98.7 11 Ag & Life Science 0.7 3.6 95.7 12 Design 2.1 4.3 93.6 13 Education & Psychology 1.3 3.8 94.9 14 Engineering 1.5 13.9 84.6 15 Forest Resources 0.0 4.7 95.3 16 Humanities & Social Sciences 1.8 1.8 96.5 17 Physical & Math Sciences 0.0 10.1 89.9 18 Textiles 0.0 2.8 97.2 19 Veterinary Medicine 1.1 0.0 98.9 20 Management 0.0 5.0 95.0 Totals 1.0 5.7 93.3 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* Administration - Undeclared 1.0 7.7 91.3 11 Ag & Life Science 0.3 5.7 94.0 12 Design 0.0 10.2 89.8 13 Education & Psychology 0.0 11.7 88.3 14 Engineering 0.0 7.5 92.5 15 Forest Resources 0.0 5.5 94.5 16 Humanities & Social Sciences 0.1 6.6 93.3 17 Physical & Math Sciences 0.4 9.6 90.0 18 Textiles 0.0 3.7 96.3 19 Veterinary Medicine 0.0 0.0 0.0 20 Management 1.6 2.4 96.1 Totals 0.4 6.6 93.0

*Fall 1995 * *Percent of Graduate students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* 11 Ag & Life Science 1.1 7.6 91.3 12 Design 5.7 15.9 78.4 13 Education & Psychology 1.6 4.2 94.1 14 Engineering 2.1 11.8 86.1 15 Forest Resources 0.0 5.2 94.8 16 Humanities & Social Sciences 0.5 3.3 96.2 17 Physical & Math Sciences 0.5 8.5 91.1 18 Textiles 0.0 5.1 94.9 19 Veterinary Medicine 0.0 0.6 99.4 20 Management 1.0 5.6 93.4 Totals 1.3 6.9 91.8 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 >* *No difference* 11 Ag & Life Science 0.0 7.1 92.9 12 Design 0.8 19.1 80.1 13 Education & Psychology 0.0 7.2 92.8 14 Engineering 0.4 8.9 90.7 15 Forest Resources 0.3 8.8 90.9 16 Humanities & Social Sciences 0.3 8.6 91.1 17 Physical & Math Sciences 0.5 10.2 89.3 18 Textiles 0.3 4.8 94.9 19 Veterinary Medicine 0.0 0.0 0.0 20 Management 0.3 5.9 93.8 31 First Year College 0.0 20.2 79.8 Totals 0.2 9.1 90.7

*Spring 1996 * *Percent of Graduate students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* 11 Ag & Life Science 0.7 2.8 96.5 12 Design 3.7 4.9 91.5 13 Education & Psychology 2.9 6.2 90.9 14 Engineering 1.2 12.7 86.1 15 Forest Resources 1.2 4.7 94.2 16 Humanities & Social Sciences 1.7 2.6 95.7 17 Physical & Math Sciences 1.6 7.1 91.3 18 Textiles 0.0 1.8 98.2 19 Veterinary Medicine 0.0 5.0 95.0 20 Management 1.7 6.4 91.9 Totals 1.5 6.6 91.9 *Percent of

Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * * >No difference* 11 Ag & Life Science 0.1 5.6 94.2 12 Design 0.7 8.8 90.5 13 Education & Psychology 0.3 5.8 93.9 14 Engineering 0.2 8.1 91.7 15 Forest Resources 0.3 3.5 96.2 16 Humanities & Social Sciences 0.6 8.1 91.3 17 Physical & Math Sciences 0.0 8.0 92.0 18 Textiles 0.0 1.8 98.2 19 Veterinary Medicine 33.3 0.0 66.7 20 Management 0.4 4.8 94.8 31 First Year College 0.0 21.8 78.2 Totals 0.3 8.1 91.7 *Fall 1996 * *Percent of Graduate students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* 07 Administration 0.0 0.0 100.0 11 Ag & Life Science 0.3 1.4 98.3 12 Design 3.7 25.2 71.1 13 Education & Psychology 2.6 7.5 89.9 14 Engineering 1.6 8.2 90.2 15 Forest Resources 0.9 4.5 94.5 16 Humanities & Social Sciences 1.6 5.1 93.3 17 Physical & Math Sciences 2.5 8.9 88.6 18 Textiles 0.0 1.9 98.1 19 Veterinary Medicine 0.0 10.6 89.4 20 Management 0.4 5.1 94.5 Totals 1.5 7.5 91.1 *Percent of Undergraduate Students * *School* *Name* *-.333 to -.250 * *-.250 to 0 * *No difference* 07 Administration 6.3 12.5 81.2 11 Ag & Life Science 0.3 6.3 93.4 12 Design 1.8 18.1 80.1 13 Education & Psychology 0.4 11.6 88.0 14 Engineering 0.3 9.4 90.2 15 Forest Resources 0.4 17.3 82.3 16 Humanities & Social Sciences 0.3 9.0 90.7 17 Physical & Math Sciences 0.0 13.5 86.5 18 Textiles 0.0 5.2 94.8 19 Veterinary Medicine 8.3 0.0 91.7 20 Management 0.2 6.0 93.8 31 First Year College 0.0 23.2 76.8 Totals 0.3 10.3 89.4

QUESTION 6: Segmentation of the Student Body With Respect to Academic Warning and Suspension *The following tables, organized by undergraduate and graduate students, show the segmentation of the students with respect to academic warning, suspension, and probation for each semester. Only those students for whom + and - grades are part of the GPA calculation are included in these tables. The "calculated" GPA was computed by adding the quality points for each course (using +/- grading) and dividing by the total credit hours taken at that point. The "adjusted" GPA was computed the same way, but without using +/- grading. Transfer hours, if present, were then added to the total credit hours taken to find the total hours for each student. The students were then divided into categories (Academic Warning, Suspension, and Probation) based on the policies in the Advisor's Handbook for 1994-1995. This policy is no longer in effect, but provides a clear delineation of the population. For undergraduates, the difference in segmentation from the calculated GPA to the adjusted GPA is less than 1% for each category. For graduates, the difference is as high as 1.6% for fall 1996. Therefore, it appears that the use of +/- grading is having an impact on a small percentage of this population.

Fall 1994 *Undergraduate* *Status* *Calculated GPA* *Adjusted GPA* Academic Warning I 6.6% 6.4% Academic Warning II 1.8% 1.9% Suspension 11.1% 10.9% > 2.0 80.6% 80.9% *Graduate* *Status* *Calculated GPA* *Adjusted GPA* Probation 9.2% 7.8% > 3.0 90.8% 92.2% *Spring 1995* *Undergraduate* *Status* *Calculated GPA* *Adjusted GPA* Academic Warning I 7.4% 7.0% Academic Warning II 1.7% 1.8% Suspension 10.5% 10.3% > 2.0 80.4% 81.0% *Graduate* *Status* *Calculated GPA* *Adjusted GPA* Probation 7.5% 6.1% > 3.0 92.5% 93.9% *Fall 1995* *Undergraduate* *Status* *Calculated GPA* *Adjusted GPA* Academic Warning I 7.4% 7.0% Academic Warning II 1.8% 1.9% Suspension 11.0% 10.8% > 2.0 79.7% 80.3% *Graduate* *Status* *Calculated GPA* *Adjusted GPA* Probation 7.6% 6.2% > 3.0 92.4% 93.8% *Spring 1996* *Undergraduate* *Status* *Calculated GPA* *Adjusted GPA* Academic Warning I 7.3% 7.0% Academic Warning II 1.9% 1.9% Suspension 12.1% 11.8% > 2.0 78.8% 79.3% *Graduate* *Status* *Calculated GPA* *Adjusted GPA* Probation 7.7% 6.6% > 3.0 92.3% 93.4% *Fall 1996* *Undergraduate* *Status* *Calculated GPA* *Adjusted GPA* Academic Warning I 6.3% 5.7% Academic Warning II 2.0% 1.9% Suspension 11.8% 11.7% > 2.0 79.9% 80.7% *Graduate* *Status* *Calculated GPA* *Adjusted GPA* Probation 9.2% 6.6% > 3.0 91.8% 93.4%

QUESTION 7: Breakdown of Grades and Mean GPA by Semester The following tables show the breakdown of grades for undergraduate and graduate classes for each of the 21 semesters from fall 1986 through fall 1996. All plus and minus grades are included in these totals, whether or not the student actually received the point value assigned to plusses and minuses.

*Undergraduate * *Sem* *A+* *A* *A-* *B+* *B* *B-* *C+* *C* *C-* *D+* *D* *D-* *F* F86 18561 26115 19616 6538 6882 S87 28098 24094 17763 5488 4052 F87 20089 26346 19324 5886 6397 S88 18994 27910 17989 5145 5576 F88 21914 27491 19725 6075 6683 S89 20415 25463 17579 5187 5452 F89 22357 27556 19289 6031 6550 S90 21615 26235 17699 5426 5384 F90 23999 28258 19560 6115 6051 S91 22705 26764 17757 5588 5238 F91 26048 29957 19322 6045 5958 S92 25065 27697 17762 5643 5358 F92 27282 29398 18787 5673 5693 S93 25751 27063 17139 5134 5344 F93 27852 28936 18320 5360 5835 S94 25300 26532 16719 5064 5465 F94 797 25728 1362 1081 26522 965 621 17089 419 121 5590 85 6313 S95 1412 20224 3911 3270 20535 3195 2086 12780 1599 535 4041 319 5569 F95 1605 22969 4379 3596 21269 3783 2548 13215 1709 531 4217 425 5636 S96 1848 20063 4387 3818 19257 3412 2273 12012 1682 491 3798 388 4479 F96 2209 21871 4670 4038 21305 3701 2577 12838 1857 658 4072 462 5463 *Graduate * *Sem* *A+* *A* *A-* *B+* *B* *B-* *C+* *C* *C-* *D+* *D* *D-* *F* F86 3988 3158 567 63 116 S87 3917 2793 506 50 109 F87 3975 3075 561 41 125 S88 4004 2667 472 45 118 F88 4147 3133 535 75 146 S89 4051 2748 503 54 129

F89 4289 3218 535 59 133 S90 4309 2913 471 46 133 F90 4586 3175 453 47 110 S91 4557 2931 463 55
 126 F91 4798 3196 542 64 120 S92 5712 2979 470 45 106 F92 5317 3487 527 43 134 S93 5127 3091 444
 31 122 F93 5650 3414 555 64 137 S94 5503 2930 377 26 115 F94 193 5071 346 253 3076 107 28 479 19
 1 52 1 142 S95 282 4592 711 406 2364 148 29 344 9 1 38 2 111 F95 322 4959 922 601 2612 201 52 289
 18 5 33 0 68 S96 355 4586 797 539 2193 160 39 328 22 0 33 1 53 F96 370 4575 887 555 2387 201 64
 294 21 2 38 0 65 Below is a graphic representation of the distribution of grades for undergraduates across
 the 21 semesters, where plusses and minuses are ignored. It shows the distribution of A's, B's, C's, D's, F's
 across the 21 semesters from fall 1986 through fall 1996. The second graph shows the distribution of
 plus/minus grades for the undergraduates for the 5 semesters in which it was used. Below is a graphic
 representation of the distribution of grades for graduate students across the 21 semesters, where plusses
 and minuses are ignored. It shows the distribution of A's, B's, C's, D's, F's across the 21 semesters from fall
 1986 through fall 1996. The second graph shows the distribution of plus/minus grades for the graduate
 students for the 5 semesters in which it was used. The following table shows the mean GPA calculated
 using all plus and minus grades over the 21 semesters from fall 1986 through fall 1996, for both
 undergraduate and graduate students. All plus and minus grades were used in these calculations. However,
 there were probably some students who received plus and minus grades for whom the value associated
 with these grades was not used in the computation of their individual semester GPA. Following the table is
 a graphical representation of the changes in GPA over the 21 semesters for undergraduate and graduate
 students. *Semester* *Undergraduate GPA* *Graduate GPA* F86 2.494 3.366 S87 2.537 3.382 F87 2.552
 3.373 S88 2.586 3.401 F88 2.568 3.371 S89 2.621 3.394 F89 2.600 3.395 S90 2.642 3.418 F90 2.638 3.437
 S91 2.663 3.433 F91 2.667 3.427 S92 2.701 3.455 F92 2.704 3.446 S93 2.727 3.478 F93 2.726 3.461 S94
 2.720 3.521 F94 2.696 3.459 S95 2.716 3.512 F95 2.736 3.537 S96 2.769 3.536 F96 2.744 3.529