

**Proposition:** 12-10/11A

**Sponsors:** Jeff Amato, Tim Ketelaar, Gary Rayson, and William Storm (A&S); Maria de Boyrie (Business); Stu Munson-McGee (Engineering); Priscilla Bloomquist (ACES)

**Title:** A Proposal to Change the NMSU Grading System By Assigning Point Values to Plus/Minus Grades

**Proposed Committee:** Scholastic Affairs

**Assigned Committee:** Scholastic Affairs

**Approved by ADAC:** 12/6/10.

**Approved by ADC:** 1/18/11.

**Proposal:** Change the NMSU grading system to allow fractional grade points for plus or minus grades, and amend the NMSU Undergraduate and Graduate catalogs by changing the existing text in the section "University Grading System," in which point values are currently given as A=4, B=3, C=2, D=1, F=0, with the following grades and point values:

Letter grade	Grade points per unit of credit
A+	4.0
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0

### **IMPLEMENTATION**

The proposed changes would go into the 2012 Catalog and be implemented beginning in Summer 2012. It will affect all grades earned in all classes by students in all catalog years from that point onwards. This will give all units time to prepare for the changes. This proposal would affect GPA calculation for all grades assigned following its implementation date; courses taken before its implementation would be unaffected.

### **RATIONALE**

Under the section "NMSU Grading System" in the current Undergraduate Catalog, there is no mention of "+/- grades", (e.g., B+, C-, etc.), also known as "chromatic variants," yet these grades

have been given for decades with no impact on student GPA. This proposal is to (1) Change the catalog to specifically mention +/- grades, bringing it line with current practice; and (2) Change the grading system to give varying point values to +/- grades, making the "+" = +0.3 and the "-" = -0.3 grade points relative to the letter grade to which it is attached.

**We provide the following reasons for this change:**

(1) Currently, large differences in student performance are given different grades that have the same point value (Figure 1). Example: Three students have class averages of 89%, 85%, and 80%. These students would typically be assigned B+, B, and B- grades, yet all would count for 3.0 grade points. In the new proposal these students would be assigned 3.3, 3.0, and 2.7 grade points, respectively, thus more closely matching their actual performance. **The new grading system will more accurately reflect what the student has achieved in the class.**

(2) The consequences for a student not making it to the next higher grade are reduced. Currently, if a B+ student misses the cut-off for an A-, that student will be given 3.0 instead of 4.0. In the new system, the difference between B+ and A- is 3.3 vs. 3.7 or a difference of only 0.4.

(3) Students with "safe" grades in the middle of a certain letter grade scale might try harder in the new system to achieve the next higher grade or to avoid falling to a lower grade. Currently, if a student has a mid-B grade late in the semester, they might be unable to move to an A or a C. Now, that student could work hard through the final and get a B+ with a 0.3 point bonus.

(4) **The majority of our peer institutions, and many of the leading public and private institutions, assign value to +/- grades** (Appendix A). We were able to find only two schools in the U.S. that allow +/- grades to be assigned that have no point value: NMSU and Texas Tech. More schools have added +/- grades in recent years, including the other major Universities in New Mexico: UNM (1988), NM Tech (1996).

(5) Currently, some faculty use +/- grading, but many, once they learn that there are no point values associated with them, do not bother to use them. Others only use "-" grades but no "+" grades, to reduce grade meetings. This creates two different grading systems, potentially penalizing students whose transcripts get recalculated upon transferring to another college or when applying to graduate school or law school.

(6) **Switching to +/- grading** that does not have  $A+ = 4.0$  **may decrease the rate of grade inflation.** The average grade at NMSU has risen from 2.74 in 1980 to 3.02 in 2005, a rate of increase of 0.11 grade points per year (Figure 2). While most students will see no significant affect on grades, there will be fewer 4.0 students as some of the current A- students will get 3.7 points instead of 4.0 points.

(7) The number of students graduating with a 4.0 has increased significantly over the past 20 years (Figure 3). This proposal will restore prestige to the 4.0 GPA by making it more difficult to score at the top of the grading scale. It will reduce the increasing number of students graduating with top honors.

(8) Scholarly studies of grading systems show that +/- grading reduces grading error and results in a better indication of actual student performance (Matthews, 1997).

(9) The reduced consequences of making or missing a certain grade could lead students to focus more on learning, rather than on their GPA.

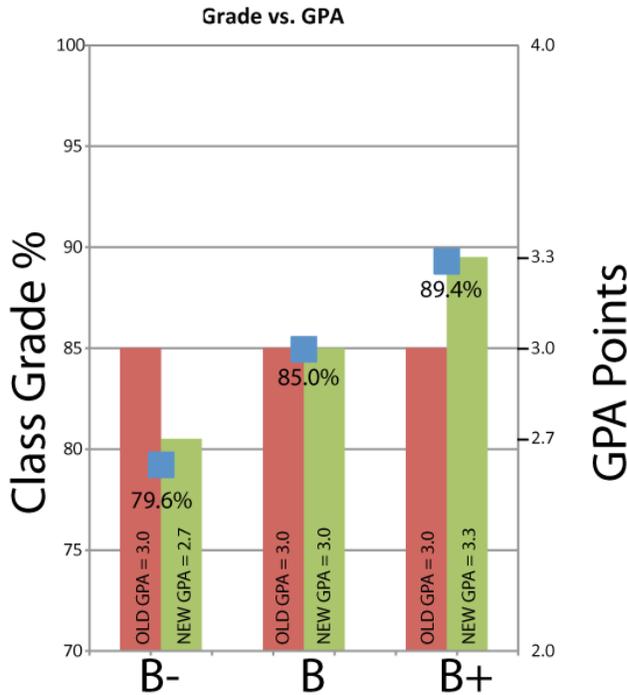


Figure 1. Difference in performance between 89.4% student and 79.6% student is large; current difference in GPA is 0.

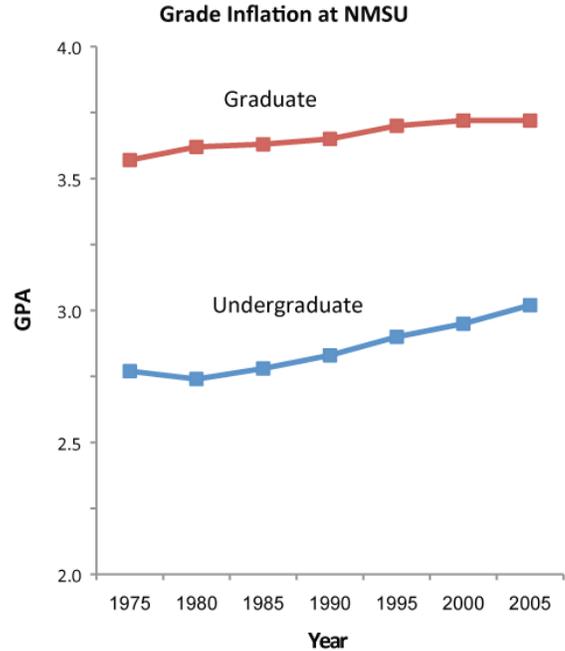


Figure 2. Grade inflation is enhanced by rounding up to avoid large GPA penalty near grade cut-off. Avg. GPA rose from 2.74 to 3.02 in 2005. Grade inflation rate at NC State was reduced by 93% after switching to +/- grading.

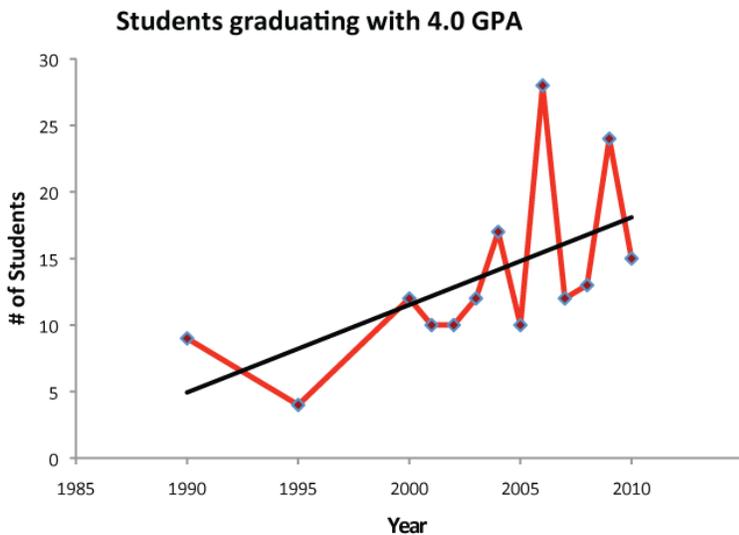


Figure 3. New system restores prestige to the top students who get a 4.0 average by reducing the ever-increasing numbers of students graduating with a 4.0.

School-wide average GPA will likely not change, but it will be harder to get a 4.0 average because A- will be worth 3.7.

Graphs by Jeff Amato from data provided by the NMSU Registrar's Office

## CONCERNS AND QUESTIONS

The following concerns have been raised during discussions held during two meetings of an ad hoc committee discussing this proposal. Here we address these concerns:

**(1) Students have to maintain a certain GPA to obtain, and retain, Federal and State Financial Aid.** Example: Federal Financial Aid students have to maintain a 2.0 GPA, or C average.

- Most "C" students will see their GPA change by no more than  $\pm 0.05$  grade points (Source: Matthews, 1997). This is because most students typically earn just as many "-" grades as "+" grades, thus canceling out any penalty or bonus.
- Students who fall below this cut-off as a result of these changes can appeal and go on probation **without losing their financial aid.**

- The Financial Aid Office will work with students who are in danger of losing scholarships because of changes in the grading system.

**(2) "A" students are worried about losing their 4.0 average**

- In the new system, the 4.0 grade is reserved for the best students, not A- students
- "An A should mean outstanding work; it should not be the default grade. If everyone gets an A for adequate completion of tasks, it cripples our ability to recognize exemplary scholarship." (Source: Andrew Perrin, UNC-Chapel Hill, in the NY Times, 12/26/10)
- Raising the expectations for achieving an A grade should motivate the best students

**(3) Will the changes be too expensive to implement?**

- No. The Registrar estimates that the changes will incur only modest costs
  - The software will be slightly modified
  - The new system will need to be tested
  - New transcript paper will need to be ordered

**(4) Will a student's GPA go down?**

- Probably not. The vast majority of grades should not change because + and – grades cancel each other out.
- Most grades will vary by no more than  $\pm 0.05$  points (Source: Matthews, 1997)
- Students with a 3.9 GPA may see a reduction of 0.08 points because A- is worth 3.7
- UT-Austin, a University that implemented +/- grading in 2009, saw that the average GPA actually rose from 3.06 to 3.09 after the change (Source: Daily Texan, 4/5/09)
- **"It makes it harder to get an A, but it helps most people." (Source: Daily Texan, 4/5/09)**

**(5) Will a student's existing grades be recalculated with the new point values?**

- No. All existing grades will retain their original point values.

**(6) Can the change be implemented beginning with a cohort of students entering under a specific catalog, say the Freshman class of 2011 or 2012?**

- No. This would create two separate grading systems *within the same classroom*, as students of different catalog years commonly take classes together. This would create an accounting

complexity too difficult to keep track of, according to the Registrar. Nor would it be fair for two students to get the same grade in the class but earn a different number of grade points for that same grade.

**(7) Faculty are unsure that they can assess student performance more accurately than to the nearest letter grade.**

• **Statistics answer:** Computer simulations (Matthews, 1997) that assume grading accuracy of one standard deviation = 3% indicate that if a student deserves a score of 85, the instructor will give a score of 79-91 95% of the time. This is within two standard deviations:  $85 \pm 6\%$ . The difference between grade points that the student should have received and what they actually received ranges from a root mean square (RMS) error of 0.3–0.7 under the current system. In the new system, the RMS error is reduced to 0.3.

• **Plain language answer:** If a faculty member assesses the student incorrectly and gives the "wrong" grade, the effects on student GPA are significantly reduced from 1 point to 0.3 points.

**(8) Faculty are worried about an increase in grade meetings**

• The consequences of missing the next grade step are significantly reduced, thus potentially reducing grade meetings.

• A clear grading policy laid out in the syllabus will help students understand why they obtained their final grade.

• This system is the most common one in the U.S. and we can deal with this as well as our colleagues at other institutions.

**(9) Why can't A+ be given 4.3 points?**

A+ is retained as an "honorific" with no additional point value. Giving 4.3 grade points to A+ grades contributes to grade inflation and can result in a student's entire GPA being reduced by 8% when another University recalculates it to match their own grading system which is capped at 4.0. Of the >400 Universities surveyed by the American Association of Collegiate Registrars and Admissions Officers, 94% of them capped their grading scale at 4.0. Retaining the A+ honorific can benefit students applying to law schools, where extra credit is given when transcripts are routinely recalculated (Source: Law School Admission Council).

**Current Text (Undergraduate Catalog)**

From Regulations, University Grading System (p. 19-20):

The NMSU system of grading is expressed in letters, which carry grade points used in calculating the cumulative grade-point average:

Letter grade	Grade points per unit of credit
A - For excellent work .....	4
B - For better than average work .....	3
C - For average work .....	2
D - For below average work .....	1
F - For failing work .....	0
W - Withdrawal .....	0
N - Grade not submitted .....	0
CR - Credit authorized, but not letter grade .....	0
IP- In progress .....	0
RR - Progress in undergraduate course .....	0
PR - Progress on graduate thesis .....	0
S* - Satisfactory work .....	0
U - Unsatisfactory work .....	0
I - Incomplete .....	0
AU - Audit .....	0

*\*An S grade is a grade satisfactory to the professor and is normally equivalent to the letter grade of C or higher.*

In computing the overall grade-point average, the total credits in which grades of A, B, C, D, or F have been assigned is divided into the total number of grade points earned.

A course for which only CR, but no letter grade, is given and a course in which an S or PR grade is earned may be counted toward graduation but is not computed in the grade-point average.

**Current Text (Graduate Catalog)**

From Regulations and Procedures for Students, Grading System, Grades (p. 13):

The grades awarded in all courses are indicative of the quality of work done. Their significance is as follows:

<b>Letter Grade</b>	<b>Points per Credit</b>
A - For excellent work	4
B - For better than average work	3
C - For average work	2
D - For below average work	1
F - For failing work	0
W - Withdrawal	0
N - no grade	0
CR - Credit authorized but no letter grade	0
IP- In progress	0
RR- Progress in undergraduate course	0
PR- Progress in graduate course	0
S - Satisfactory work	0
U - Unsatisfactory work	0
I - Incomplete	0
AU - audit	0

Distinctions within a letter grade may be indicated by the use of plus or minus, and these will become part of the official record.

**Replacement Text for both Undergraduate and Graduate Catalogs:**

The NMSU system of grading is expressed in letters, which carry grade points used in calculating the cumulative grade-point average:

<u>Letter grade</u>	<u>Grade points</u>
<u>credit</u>	<u>per unit of</u>
A+	4.0
A - For excellent work	4.0
A-	3.7
B+	3.3
B - For better than average work	3.0
B-	2.7
C+	2.3
C - For average work	2.0
C-	1.7
D+	1.3
D - For below average work	1.0
D-	0.7
F - For failing work	0.0
W - Withdrawal	
N - Grade not submitted	
CR - Credit authorized, but not letter grade	
IP - In progress	
RR - Progress in undergraduate course	
PR - Progress on graduate thesis	
S* - Satisfactory work	
U - Unsatisfactory work	
I - Incomplete	
AU - Audit	

*\*An S grade is a grade satisfactory to the professor and is normally equivalent to the letter grade of C or higher.*

In computing the overall grade-point average, the total credits in which grades of A, B, C, D, or F have been assigned is divided into the total number of grade points earned.

A course for which only CR, but no letter grade, is given and a course in which an S or PR grade is earned may be counted toward graduation but is not computed in the grade-point average.

## **SUMMARY OF CHANGES IN THIS PROPOSITION**

- 1) Point values for plus/minus grades are added to the GPA calculation.
- 2) Plus/minus grades are added to the Undergraduate Catalog
- 3) Grade points of "0" are not listed under categories such as W, indicating that these courses do not count towards GPA the same way as courses for which an F was given.

## **REFERENCES**

Matthews, R., 1997, Wake Forest University: "Evaluation of Effect of the Plus/Minus Grading System: A Computer Model," [http://www.wfu.edu/~matthews/plus\\_minus/plus\\_minus.html](http://www.wfu.edu/~matthews/plus_minus/plus_minus.html)).

## **ACKNOWLEDGMENTS**

The proposition benefitted from input from an Ad Hoc Committee on +/- Grading that had representatives from faculty, administration, and students, with representatives from nearly all of the Colleges. Meetings took place in September and October, 2010. Those participating may not agree with all of the information listed here (blame the sponsors).

Committee members included:

**Faculty:** Jeff Amato, Ad Hoc Committee Chair (A&S), Timothy Ketelaar (A&S), David Rutledge (Education), Maria deBoyrie (Business).

**Associate Deans:** Peter Gregware (A&S), Krist Peterson (Engineering), Jim Libben (ACES), and Stephen Arnold (HSS)

**Administrators:** Ramon Dominguez (Provost's Office), Michael Zimmerman (Registrar), Marlene Melendez and Carlos Clark (Office of Financial Aid and Scholarship Services), Bernadette Montoya (Assistant VP/Enrollment Management)

**Students:** Travis Dulaney (President, ASNMSU), Matt Moberly (Graduate Student), Joey Baldonado (Undergraduate Student)

This proposition also benefitted from input by:

David Rutledge and Joe Pfeiffer, sponsors of Proposition 01-06/07; William Gould, Faculty Senator, Fall 2010; Hank Strevel, ASNMSU Graduate Senator

Kimberly Eiland, Assistant Registrar

David Hillis, Dept. Biology, UT-Austin, Chair of the Faculty Council Education Policy Committee

## APPENDIX A

1 **Schools with fractional grading schemes (+/- grades that count for GPA):**

2

3 **Peer Institutions:**

4 Oregon State University

5 U. Nevada Reno

6 Washington State University

7 Iowa State University

8 Colorado State University

9 University of Idaho

10 University of New Mexico (since 1988)

11 Utah State University

12 Montana State University

13

14 **Other Public Universities:**

15 UT- Austin (since 2009)

16 University of Virginia

17 Old Dominion (since 1985)

18 NM Tech (since 1996)

19 Central Michigan University

20 University of Calgary

21 University of Houston

22 University of Kansas

23 North Carolina State (since 1994)

24 Stanford University

25 William and Mary

26 U. California-Berkeley (and other UC schools)

27 U. Michigan

28 U. North Carolina (since 1994)

29 University of Utah

30

31 **Peer Institutions with no +/- grading scheme:**

32 Kansas State University

33 Oklahoma State University

34 University of Arizona

35 UTEP

36 University of Wyoming