Grading within **California Community Colleges**

As Documented in 2011-2012 Official College Catalogs

CCCs that Use Letter Grading		CCCs that Use +/- Grading
Allan Hancock	Los Medanos	Chaffey
American River	Mendocino	College of Marin
Antelope Valley	Merced	College of the Redwoods
Bakersfield	Merritt	Cuesta
Barstow	Miracosta	Cuyamaca
Berkeley City	Mission	DeAnza
Butte	Modesto	Feather River
Cabrillo	Monterey Peninsula	Foothill
Cañada	Moorpark	Gavilan
Cerritos	Moreno Valley	Grossmont
Cerro Coso	Mt. San Antonio	
Chabot	Mt. San Jacinto	
Citrus	Napa Valley	
City College of San Francisco	Norco	
Coastline	Ohlone	
College of Alameda	Orange Coast	
College of San Mateo	Oxnard	
College of the Canyons	Palo Verde	**Total = 10**
College of the Desert	Palomar	
College of the Sequoias	Pasadena	
College of the Siskiyous	Porterville	
Columbia	Reedley	
Contra Costa	Rio Hondo	
Copper Mountain	Riverside City	
Cosumnes River	Sacramento City	
Crafton Hills	Saddleback	
Cypress	San Bernardino Valley	
Diablo Valley	San Diego City	
East Los Angeles	San Diego Mesa	
El Camino	San Diego Miramar	
Evergreen Valley	San Joaquin Delta	
Folsom Lake	San Jose City	
Fresno City	Santa Ana	
Fullerton	Santa Barbara City	
Glendale	Santa Monica	
Golden West	Santa Rosa	
Hartnell	Santiago Canyon	
Imperial Valley	Shasta	
Irvine Valley	Sierra	
Lake Tahoe	Skyline	
Laney	Solano Community	
Las Positas	Southwestern	
Lassen	Taft	
Long Beach	Ventura	
Los Angeles City	Victor Valley	
Los Angeles Harbor	West Hills College Coalinga	
Los Angeles Mission	West Hills College Lemoore	
Los Angeles Pierce	West Los Angeles	
Los Angeles Southwest	West Valley	
Los Angeles Trade-Tech	Woodland Community	
Los Angeles Valley	Yuba	
	Total = 102	

n = 112

Summary: Of CCCs, 102 out of 112 use letter grading; 10 out of 112 use plus/minus grading.

In percentages, 91% use letter grades, and 9% use plus/minus grades.

Grading within the **California State University** System

As Documented in 2011-2012 Official College Catalogs

CSUs that Use Letter Grading	CSUs that Use +/- Grading
Fresno Long Beach **Total = 2** n = 23 Summary: Of CSUs, 2 out of 23 use letter grading; 21 out of 23 use plus/minus grading. In percentages, 9% use letter grades, and 91% use plus/minus grades.	Bakersfield Channel Islands Chico Dominguez Hills East Bay Fullerton Humboldt Los Angeles California Maritime Academy Monterey Bay Northridge Cal Poly, Pomona Sacramento San Bernardino San Diego State University San Francisco State University San Jose State University Cal Poly, San Luis Obispo San Marcos Sonoma State University Stanislaus **Total = 21**

Grading within the **University of California** System

As Documented in 2011-2012 Official College Catalogs

UCs that Use Letter Grading	UCs that Use +/- Grading
UC San Francisco **Total = 1** n = 10 Summary: Of UCs, 1 out of 10 uses letter grading; 9 out of 10 use plus/minus grading. In percentages, 90% use letter grades, and 10% use plus/minus grades.	UC Berkeley UC Davis UC Irvine UCLA UC Merced UC Riverside UC San Diego UC Santa Barbara UC Santa Cruz **Total = 9**

Summary of Major Arguments for and against Adoption of Plus/Minus Grading

Adopt Plus-Minus Grading	**Do Not Adopt** Plus/Minus Grading
• **Provides a fairer system of measurement.** Ten points is too large of a range for grades. There is a significant difference between a student who has an 80 and an 89, for example. Plus-minus grades more accurately and fairly document student achievement. • **Motivates students to work harder.** Even when improving an entire letter grade is unlikely, students will keep trying as much as they can to earn the next highest grade possible. More precise grading will encourage students to keep working hard throughout the semester. • **Is consistent with the majority of UCs and CSUs.** Ninety-one percents of CSUs and ninety percent of UCs have already adopted plus-minus grading. • **Has minimal impact on student GPA.** Studies show that overall impact on GPA is negligible. (See Appendix A and B.) • **Is at the teacher's discretion**. Teachers who prefer to use letter grades will still have the option to do so even if the plus-minus grading option is adopted by the Senate.	• **Impacts "A" students disproportionately, possibly affecting transfer to top universities.** Because there is no A+ grade, formerly "straight A" students will have downward pressure on their GPAs. With transfer admissions becoming so competitive, even $1/10^{th}$ of one percentage point could determine entry to a top-ranked school. • **Increases stress on already pressured students.** Grade conscious students feel significant pressure to perform well at college. When the percentage points are separated into even more categories, the pressure to earn extra points will escalate. • **Is not consistent with the majority of California Community Colleges.** Ninety-one percent of CCCs use letter grades. We should try to be consistent with our institutional peers, rather than following other systems. Also, our transferring students will be competing against transfers from other CCCs. If our grading standards are different, they may be at a disadvantage. • **Creates more grading conflicts between students and teachers.** Students already argue about grades. With many more grading standards to choose from, disputes will increase. Further, students may be unhappy with the instructor's choice either to adopt or not adopt plus/minus grading, creating additional conflicts.

Potential Impact on Transferring Students

While most research to date documents little to no impact on overall student GPA when the student body is considered as a whole (see the Annotated Bibliography and Appendix A and B), when an impact has been documented, it has tended to be on two groups: straight A students and straight C students. In the pilot study that the San Mateo Community College District conducted from Fall 2009 to Spring 2011, the researchers found that "In sum, the implementation of the plus-minus grading system would have a slight downward (.01 - .02) overall effect on student GPAs." They project that if the pilot data hold true to future cohorts, "On average, it would be expected that a handful of 4.0 GPA students under a letter grade system would become 3.95 to 3.99 GPA students, but there would be a slight increase in GPAs from students averaging in the 2.0 GPA range."

The slightly depressive effects on A students' GPAs was also documented in the De Anza College pilot study that took place between fall 2004 and fall 2005. They found, "For 4.00 students with 45 or more attempted units of credit (one full year) about 44% earn less than 4.00 under plus/minus grading." The net effect is negligible, impacting GPA very slightly for these straight A students, a shift that is counter-balanced by the slight uptick in C students' averages. Thus, the overall college-wide GPA is relatively flat.

Given that, it might be useful to look at average transfer GPAs at some of the most popular transfer universities for Santa Barbara City College students. Because impact on GPA is likely to only affect A and C students as a group, the colleges listed below are divided into two categories: "top tier" and "more accessible." Those categories reflect the more likely transfer outcomes of an A average versus C average student.

Average Entering TRANSFER GPAs for Selected Universities*

Selected "Top Tier" Transfer Universities (Public: above the line; Private: below the line)			Selected "More Accessible" Transfer Universities	
UC Berkeley	3.60-3.95**		CSU Long Beach	3.09-3.55**
UCLA	3.70		CSU Channel Islands	3.0***
UCSB	3.44		CSU Sonoma	2.50-2.99****
Cal Poly, SLO	3.32			
San Diego State University	3.23			
USC	3.5		Mount St. Mary's	3.0-3.44**
Stanford	GPA not published, but only 4% of applicants were accepted.			

Discussion: As the number of spots available in California state institutions declines, the average entering GPA is likely to increase in the next few years. Further, the average GPA does not reflect significantly higher GPAs required in impacted majors. For A students, the slight downtick in GPA could potentially impact the ability to enter top-rated institutions. Conversely, even more accessible institutions have average GPAs well above a C average. A C students whose average might improve from a 2.0 to a 2.5 might have a slightly increased chance of university entrance, but generally speaking, even a 2.5 would not assure a student of entrance. The minimum 2.0 GPA that California State Universities require for transfer does not reflect the reality of the average transferring student.

**Data is based on 2010-2011 admission data, as published by the universities.*
***The range reflects the median, which varies depending on the major.*
****Most CSU schools do not publish data on average transfer GPAs. This number is derived from the average GPA of students who were admitted but declined to attend. It may differ somewhat from the average transfer GPA for all admitted students.*
*****The college has not published an average. This range reflects the median transfer GPA, according to the 2011-2012 Common Data Set.*

Annotated Bibliography: Plus/Minus Grading

Seminal Articles Organized by Date

Note: There are many other articles available online via college and university websites regarding this topic. Most adoption of plus/minus grading has been at the university level, and those discussions are freely available via the Internet. The articles summarized below are those that were either produced by governing structures within California or that have been peer reviewed and published in professional journals. As such, this is a limited list. **To show the progression of ideas over time, the articles have been placed in order of publication date** rather than in alphabetical order by author.

Farland, R., & Cepeda, R. (1989). *Plus and minus grading.*(Report No. ED 309 802). Sacramento: Prepared as Agenda Item Number 9 at a meeting of the Board of Governors of the California Community Colleges, September 14-15. (ERIC Document Reproduction Service No. JC 890 370)

The authors note that before 1980, there was no restriction against using plus/minus grading. The limitation to letter grades only at California community colleges occurred because of an effort to make grading more uniform. The authors recommend that colleges be allowed to make a choice to use plus/minus grading or not. According to their research at that time, "Mathematical modeling shows that statistical effects are likely to be small." They note that at the two colleges where teachers had used a plus/minus scale, "Grade point averages dropped slightly. This appeared to be due in large part to conversion of As into A-s" (p. 2). With little or no impact on overall GPA, they recommend that colleges be allowed to decide whether to adopt plus/minus grading or not, as long as the issue of C- grading is resolved in education code.

The Educational Policies Committee. (1996). *Plus and minus grading options: Toward accurate student performance evaluations.* Sacramento: The Academic Senate for California Community Colleges.

This article was produced by the Educational Policies Committee of the Academic Senate for California Community Colleges during the 1995-1996 school year. The committee members recommend "permissive" use of plus/minus grading at California Community Colleges. They note the Senate's endorsement of this action, specifying that individual colleges will decide whether or not to adopt the grading option. They cite greater accuracy, student motivation, and elimination of the C- as reasons to adopt plus/minus grading. They cite increasing use of plus/minus grading at universities as another reason for adoption.

Since the publication of this article, Title 5 language was changed to allow colleges to adopt plus/minus grading if they wish. As stated in Title 5 55023(b), "The governing board of a community college district may use "plus" and "minus" designations in combination with letter grades, except that the grade of C minus shall not be used. If pluses and minuses are used, the grade point value of a plus shall be computed by adding 0.3 to the value assigned to the letter grade with which it is combined, and the grade point value of a minus shall be computed by subtracting 0.3 from the value assigned to the letter grade with which it is combined, except that no grade point value shall be less than 0 or greater than 4.0."

Curriculum Services Unit. (1997). Plus and minus grading: A report to consultation and the Board of Governors. Chancellor's Office of California Community Colleges.

In this report from State Chancellor's Office staff, they recommend the policy that would later be instituted in Title 5 language, allowing community colleges to choose whether or not to use plus/minus grading but recommending that A+ and C- grades not be allowed. The authors note a move to plus/minus grading should not be mandatory at California community colleges. Among the reasons, they mention two factors. A) "Although more colleges have converted to +/- in the past decade, it remains a minority practice among all U.S. colleges, and it is especially rare among community colleges." B) "The

Management Information Services unit has determined that the start-up cost of implementing plus/minus would run approximately between $10,000 and $40,000 per district, with an average cost of about $23,000" (p. 9). They state that these costs are primarily for new forms and computer programming. They note small ongoing expenses related to processing "additional grade change requests." Because their summary of the research does not include compelling evidence in terms of governance or equity that clearly supports a universal change, they recommend that decisions about whether or not to adopt +/- grading be left up to local control.

Baker III, H.E., & Bates, H.L. (1999). Student and faculty perceptions of the impact of plus/minus grading: A management department perspective. *Journal on Excellence in College Teaching, 10* (1), 23-33.

The authors document student and faculty perceptions of the plus/minus grading system that was adopted at a mid-sized public university. The study took place over a two-year period following implementation of the plus/minus system. The majority of students (59.7%) viewed the new system negatively, while 58.6% of faculty did. The authors also analyzed effect on GPA after implementation and found no statistically significant impact on aggregate GPA, although individual student GPAs may have been affected. While the authors admit that the limitations of their study (a single program within a public university) may limit applicability of findings more broadly, they conclude by observing, "The question that those considering adopting plus/minus grading need to ask is whether it is worthwhile to adopt a system that, in the aggregate, has no effect, but is viewed negatively by both students and faculty" (p. 30). However, the authors note that negative student and faculty perceptions may shift over time as the new system becomes more familiar.

Bresette, A. (2002). Arguments for plus/minus grading: A case study. *Educational Research Quarterly 25* (3), 29-41.

The author summarizes a year-long study session conducted by a committee at a four-year private liberal arts college to examine issues around plus/minus grading and make recommendations for its adoption. The author outlines the four main reasons the committee gave for recommending adoption. The first is that plus/minus grading dampens grade inflation. In the summary of research on this issue, Bresette points out that while many schools report a flat overall effect on aggregate GPA, among those that do report a change, most report a small downward effect, thereby curbing grade inflation. Other reasons given include better differentiation of student performance, potential for motivating students, and strengthening the image of grades and the value of a degree.

Dixon, C. (2004). Plus/minus grading: If given a choice. *College Student Journal 38* (2), 280-284.

When students were given a choice about which grading system they wanted to apply, they chose the straight letter grade option by a ratio of two to one. The study was limited to an "Introduction to Programming" class within Computing Science. Students in other areas may make different choices.

McClure, J.E., & Spector, L.C. (2005). Plus/minus grading and motivation: an empirical study of student choice and performance. *Assessment and Evaluation in Higher Education, 30* (6), 571-579.

In the only empirical study in the published literature to date of the impact of plus/minus grading on student motivation, as reflected in student performance, the authors found that the change in grading system had no impact, positive or negative, on performance. Students were given a choice of which grading system they prefer; the instructor did not know which system students had chosen until after the final grade was determined. The authors summarize, "For undergraduates enrolled in a limited number of courses at a mid-sized Midwestern US university, the choice of plus/minus grading had no statistically significant influence upon the percentage of total points earn[ed] during a semester" (p. 577). They argue that while reports about plus/minus grading are replete with anecdotes about students for whom plus/minus grading might impact motivation and ultimate performance, their results do not bear this out.

Appendix A: Research Report on Impact of Plus/Minus Grading on GPA in the San Mateo CC District

San Mateo Community College District Plus – Minus Grading Pilot 2009-11 Fact Sheet

Between Fall 2009 and Spring 2011, the three colleges in the San Mateo County Community College District – Cañada College, College of San Mateo, and Skyline College – engaged in a pilot of a plus-minus grading system. Faculty were given the option to utilize "+" and "-" grades in a "shadow" system, where the student's actual grade was not affected. In doing so, the effects of a plus-minus grading system could be studied without any effect on students. Not all faculty availed themselves of the option to use plus-minus grading, but there was a significant enough sample from a statistical standpoint to be representative of the actual effects of a plus-minus grading system.

State Title V Regulations do not allow the A+ or C- grades to be given. As such, the possible A-F grading options include A, A-, B+, B, B-, C+, C, D+, D, D-, and F. The grade points assigned under the two systems are:

Letter Grade Only Model		Plus-MinusGrading Model	
Grade	**Grade Points**	**Grade**	**Grade Points**
A	4.0	A	4.0
B	3.0	A-	3.7
C	2.0	B+	3.3
D	1.0	B	3.0
F	0.0	B-	2.7
		C+	2.3
		C	2.0
		D+	1.3
		D	1.0
		D-	0.7
		F	0.0

In theory, the lack of the A+ grade and the C□ grade would balance out from a mathematical standpoint. In reality, because a significantly higher number of grades are in the "A" range than the "C" range (over twice as many As are given than Cs), a net effect of a slight depression on overall GPAs would be expected under the new grading system. However, this effect would be expected to be small, as students would benefit from the B+ and C+ grades as often as they would have the downward effect of the A- and B- grades.

The results were analyzed from four semesters: Fall 2009, Spring 2010, Fall 2010, and Spring 2011. Some initial findings:

- Plus / minus grades were given in 4,030 sections, or 38% of the total sections in the four semesters. The ratio of sections where plus / minus grades were given was extremely consistent at the three colleges – 40% at Skyline, 38% at Cañada, and 36% at CSM.
- Overall, 64% of instructors used plus / minus in at least one section at some point in the four terms (Skyline – 66%, Cañada – 64%, CSM – 63%).
- Overall, 114,908 of the 281,925 grades (41%) were given in a section where at least one plus or minus was given.
- In sections where plus / minus grades were given, the overall GPA using letter-only would have been 2.73, and using plus-minus, it was 2.71. Note that these are not student GPAs – but are based on the sum total of the grade points given for each course enrollment.

In sum, the implementation of the plus-minus grading system would have a slight downward (.01 - .02) overall effect on student GPAs. On average, it would be expected that a handful of 4.0 GPA students under a letter grade system would become 3.95 to 3.99 GPA students, but there would be a slight increase in GPAs from students averaging in the 2.0 GPA range.
http://www.mpcfaculty.net/senate/PlusMinusGrading/plus%20minus%20grade%20pt%20avg%20study.pdf

Appendix B: Research Report on Impact of Plus/Minus Grading on GPA in the Foothill/De Anza CC District

To: Martha Kanter, Chancellor
Board of Trustees
Presidents, Foothill and De Anza Academic Senates

From: Bob Barr, Executive Director

Date: January 31, 2006

Re: **Results of the Plus/Minus Grading Pilot Study**

In April 2004 the Board of Trustee revised the Grading Policy (Policy #6125) approving the implementation of plus/minus grading "unless substantial adverse impact on students is demonstrated" during a pilot study implementation period from Fall 2004 through Fall 2005.

The result of the study conducted by Institutional Research and Planning (attached) **shows no substantial adverse impact on students**.

The basic findings of the study are:

- The average GPA dropped 0.01 of a point from 2.92 to 2.91 when student GPAs are calculated under the plus/minus scheme. This is neither a substantial adverse effect nor a statistically significant difference. It is the smallest possible difference in GPA's calculated to two decimal places.
- It was expected that some proportion of 4.00 students would earn GPAs less than 4.00 under the plus/minus scheme since the plus/minus grading scheme includes an A- grade but no A+ grade. The study found that for 4.00 students with 45 or more attempted units of credit (one full year) about 44% earn less than 4.00 under plus/minus grading. However, 97% of those with 45 or more units earn a GPA of 3.95 or better under plus/minus grading and the average GPA of all 4.00 students drops only 0.03 points to 3.97 under plus/minus grading.

Therefore, it is the opinion of the researchers that the pilot study reveals no substantial adverse effect on student grades on average.

http://research.fhda.edu/researchreports/file_library/Plus%20Minus%20Grading%20Pilot%20Results%20Final%202-1-06.pdf